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Airfield Pavement Evaluation, Biggs Army Airfield, Fort Bliss, Texas

Robert W. Grau and Patrick S. McCaffrey, Jr.

February 2003

Geotechnical and Structures Laboratory

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by Robert W. Grau, Patrick S. McCaffrey, Jr.

Geotechnical and Structures Laboratory
U.S. Army Engineer Research and Development Center
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Final report

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Contents

Preface

The purpose of this report is to provide an assessment of load-carrying capacity and condition of airfield pavements at Biggs Army Airfield (BAAF), Fort Bliss, Texas. This report provides data for the following:

a. Planning and programming pavement maintenance, repairs, and structural improvements.

b. Designing maintenance, repair, and construction projects.

c. Determining airfield operational capabilities.

d. Providing information for aviation flight publications and mission planning.

Users of information from this report include the installation's Directorate of Installation Support (DIS), engineering design agencies (DIS's, U.S. Army Corps of Engineers), Airfield Commanders, U.S. Army Aeronautical Services Agency, and agencies assigned operations planning responsibilities. Information concerning aircraft inventory, passes, and operations shall not be released outside U.S. Government agencies. This report satisfies requirements for condition inspection and structural evaluation established in Army Regulation AR 420-72 (Headquarters, Department of the Army 2000) and supports airfield survey requirements identified in Army Regulation AR 95-2 (Headquarters, Department of the Army 1990).

The Army Airfield Pavement Evaluation Program is sponsored and technically monitored by the U.S. Army Corps of Engineers, Transportation Systems Center (CENWO-ED-TX), located in Omaha, NE. The U.S. Army Forces Command (AFEN-PR), Fort McPherson, Georgia, provided funding for this investigation.

Personnel of the U.S. Army Engineer Research and Development Center (ERDC), Geotechnical and Structures Laboratory (GSL), Vicksburg, MS, prepared this publication. The findings and recommendations presented in this report are based upon pavement structural testing, data analysis, and condition survey work at BAAF. The required field testing was conducted in June 2002. The evaluation team consisted of Messrs. Robert W. Grau, Dan D. Mathews, and Patrick S. McCaffrey, Jr., and Ms. Lucy D. Phillips, Airfield and Pavements

Branch (APB), GSL. Messrs. Grau and McCaffrey prepared this publication under the supervision of Mr. Don R. Alexander, Chief, APB; Dr. Albert J. Bush III, Chief, Engineering Systems and Materials Division; and Dr. David W. Pittman, Acting Director, GSL.

At the time of publication of this report, Dr. James R. Houston was Director of ERDC, and COL John W. Morris III, EN, was Commander and Executive Director.

Recommended changes for improving this publication in content and/or format should be submitted on DA Form 2028 (Recommended Changes to Publications and Blank Forms) and forwarded to Headquarters, U.S. Army Corps of Engineers, ATTN: CECW-EWS, 441 G Street NW, Washington, DC 20314.

Executive Summary

Personnel of the U.S. Army Engineer Research and Development Center (ERDC), Vicksburg, MS, conducted the field testing at Biggs (BAAF), Fort Bliss, Texas, during June 2002. The structural capacity and physical properties of the pavement facilities were determined from nondestructive tests using a heavy weight deflectometer (HWD) and from measurements taken in previous studies. A visual inspection was also conducted to establish the condition of the airfield surface, which does not necessarily correspond to its load-carrying capacity.

The results of the tests and visual inspection reveal the following:

a. The airfield pavement facilities and their assigned Pavement Classification Number (PCN) are shown in Illustration 1.

b. All of the runway features are structurally adequate to withstand day-to-day mission (i.e., peacetime use) for 20 years. All of the taxiway features with the exception of T8B, T9B, T10B, T19B, and T20B are structurally adequate to withstand day-to-day mission (i.e., peacetime use) for 20 years. Apron features A1B, A2B, A10B, and A21B are structurally adequate to withstand day-to-day mission (i.e., peacetime use) for 20 years. All of the remaining apron features require structural improvement to withstand the day-to-day mission (i.e., peacetime use) for 20 years.

c. Installation Status Report (ISR) ratings for the airfield are shown in Illustration 2.

d. Approximately $755,000 (FY03) for repair is required to improve the surfaces of five runway features (R2A, R5C, R6C, R7C, and R9A), four taxiway features (T8B, T9B, T19B, and T20B), and two apron features (A5B and A6B) to meet the minimum Pavement Condition Index (PCI) requirements. The PCIs of 12 apron features (A3B, A4B, A7B, A8B, A11B, A12B, A13B, and A15B through A19B) fail to meet the minimum PCI requirements. Because of the density and severity of the various distresses observed in these 12 features, maintenance and/or repair is not recommended for upgrading to an acceptable PCI level. Each feature should be reconstructed based on projected usage.

e. In planning structural improvements and/or reconstruction requirements, it should be recognized that UFC 3-260-02 (Headquarters, Departments of the Army, Navy, and the Air Force 2001b) specifies that the following pavements be rigid pavement: all paved areas on which aircraft or helicopters are regularly parked, maintained, serviced, or preflight checked; on hangar floors and access aprons; on runway ends 305 m (1,000 ft) of a Class B runway; primary taxiways for Class B runways; hazardous cargo, power check, compass calibration, warmup, alert, arm/disarm, holding, and washrack pads; and any other area where it can be documented that a flexible pavement will be damaged by jet blast or by spillage of fuel or hydraulic fluid.

f. Overloading the pavement facilities may shorten the life expectancy.

g. In order to be in concurrence with AR 420-72 (Headquarters, Department of the Army 2000), a condition survey of the airfield pavements will be required in 2006 and a structural evaluation including nondestructive testing in 2010.

Additional details on structural capacity, surface condition, and work required to maintain and strengthen the airfield are contained in Chapters 2 and 3 of this report.

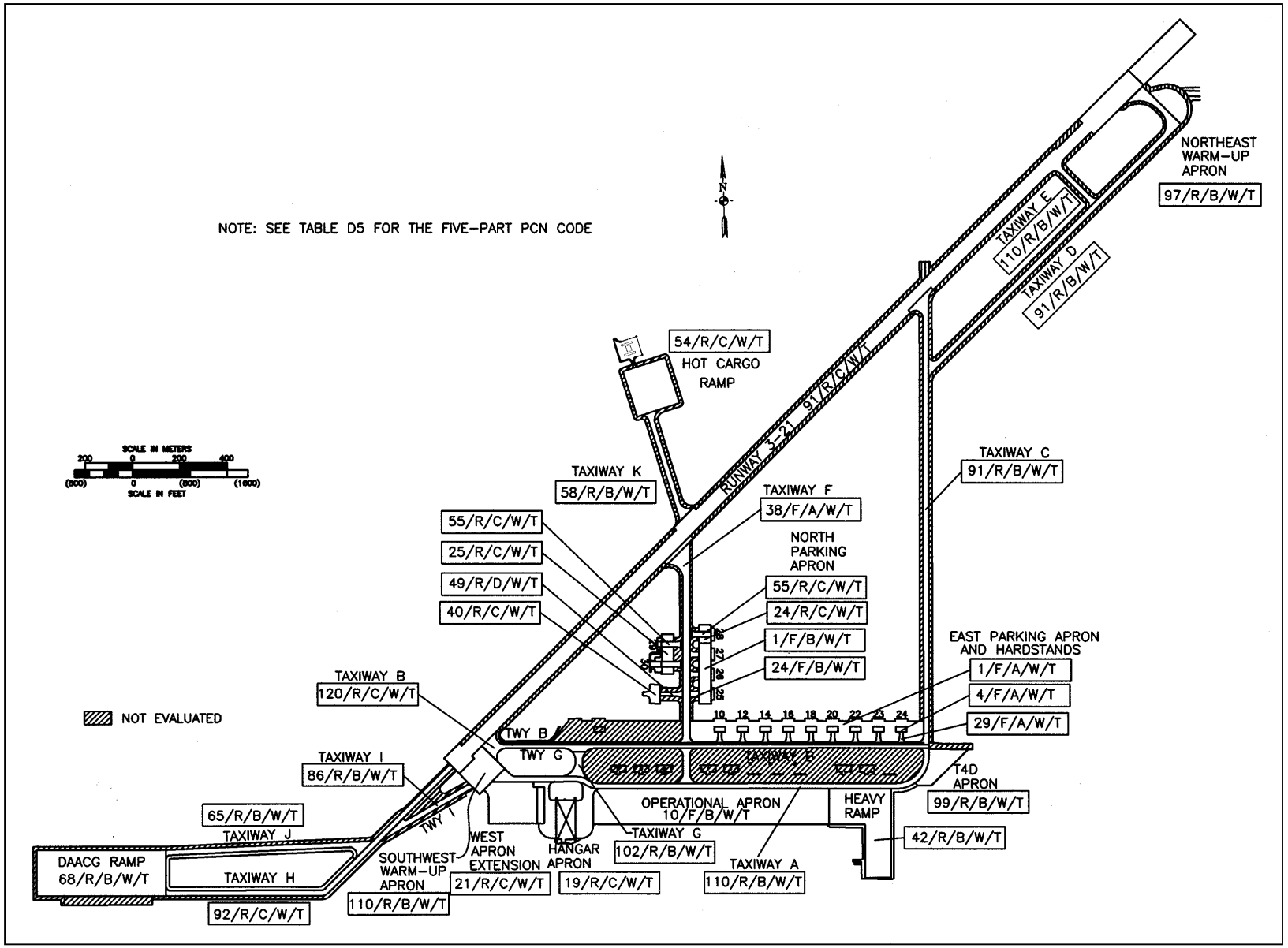


Illustration 1. Airfield Pavement Evaluation Chart (APEC)

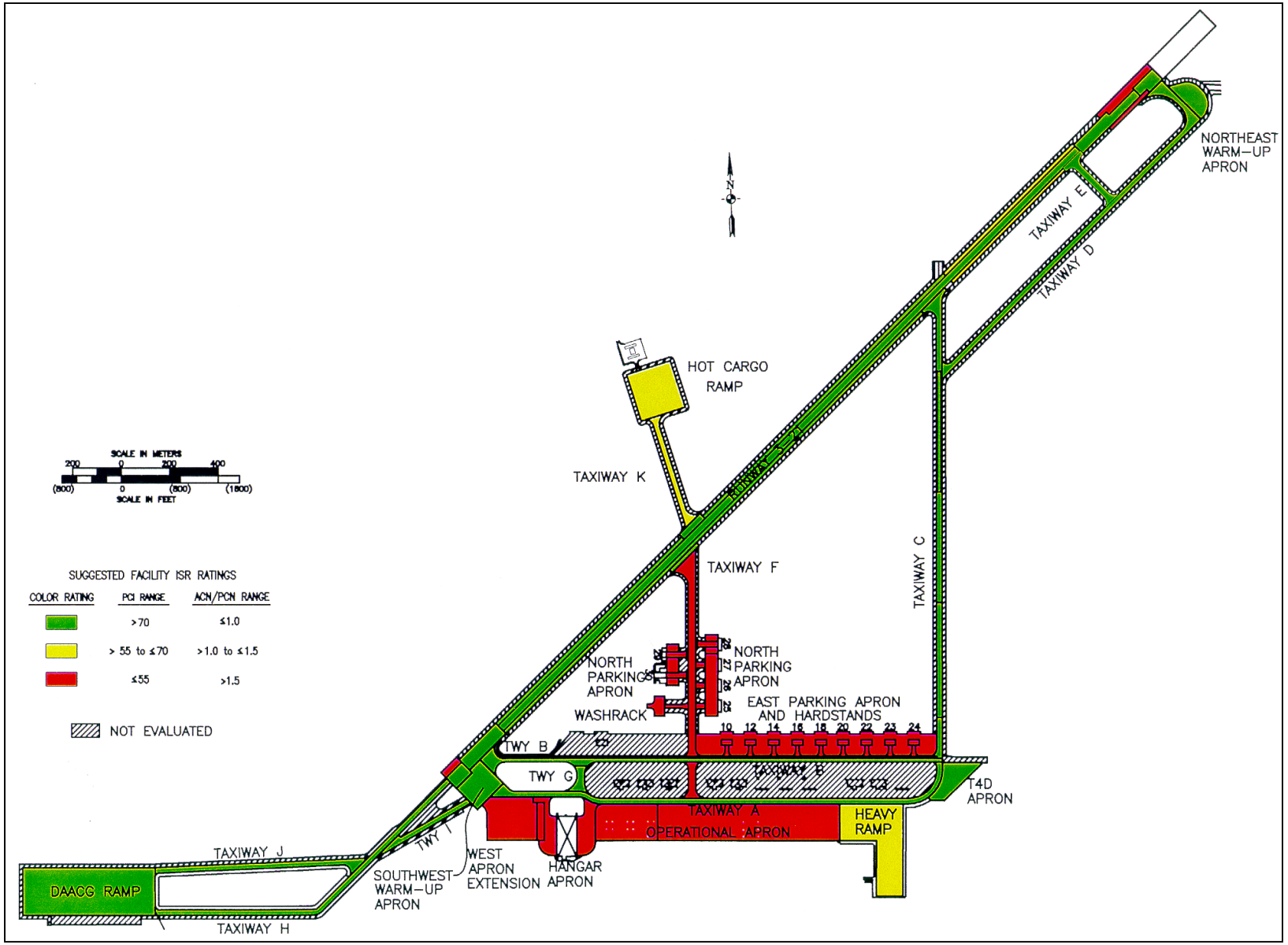


Illustration 2. Airfield pavement ISR ratings

1 Introduction

Background

In May 1982 the Department of the Army initiated a program to determine and evaluate the physical properties, the load-carrying capacity for various aircraft, and the general condition of the pavements at major U.S. Army Airfields (AAFs). This program was established at the request of the Major Army Commands (FORSCOM, TRADOC, and AMC). Headquarters, U.S. Army Corps of Engineers (CECW-EW) sponsors a program for periodic evaluation of Army Airfield facilities in accordance with Army Regulation AR 420-72 (Headquarters, Department of the Army 2000). All Category 1 AAFs and instrumented U.S. Army Heliports (AHPs) are included in the CECW-EW program. The evaluation of the airfield pavements was performed to determine the structural adequacy of the existing pavements to accommodate mission aircraft. Results of this evaluation were also used to identify maintenance, repair, and major repair work requirements and to help establish Installation Status Report (ISR) ratings. The U.S. Army Forces Command (AFEN-PR), Fort McPherson, Georgia, provided funding for this investigation. Results of this investigation will provide current information for designing upgrades to the pavement facilities.

Objective and Scope

The primary objectives of this investigation were to determine the allowable aircraft loads and design traffic, and to identify maintenance, repair, and structural improvement needs for each airfield pavement feature. These objectives were accomplished by:

a. Obtaining records of day-to-day traffic operations from the installation Airfield Commander.

b. Conducting a structural evaluation of the airfield pavements in accordance with UFC 3-260-03 (Headquarters, Departments of the Army, Navy, and the Air Force 2001a) using the nondestructive testing device.

c. Performing a condition survey to determine pavement distresses (type, severity and magnitude) in accordance with ASTM D 5340-93 and using analysis features of the Micro PAVER pavement management system.

The results of this study can be used to:

a. Provide preliminary engineering data for pavement design (Appendixes A and B).

b. Assist in identifying and forecasting maintenance and repair work, the preparation of long range work plans, and programming funds for the various work classification categories (Appendixes C and E).

c. Determine type and gross weights of aircraft that can operate on a given airfield feature without causing structural damage or shortening the life of the pavement structure (Appendix D).

d. Determine aircraft operational constraints as a function of pavement strength and surface condition (Appendix D).

e. Determine the need for structural improvements to sustain current levels of aircraft operations (Appendix D).

f. Summarize results for ISR ratings (Executive Summary).

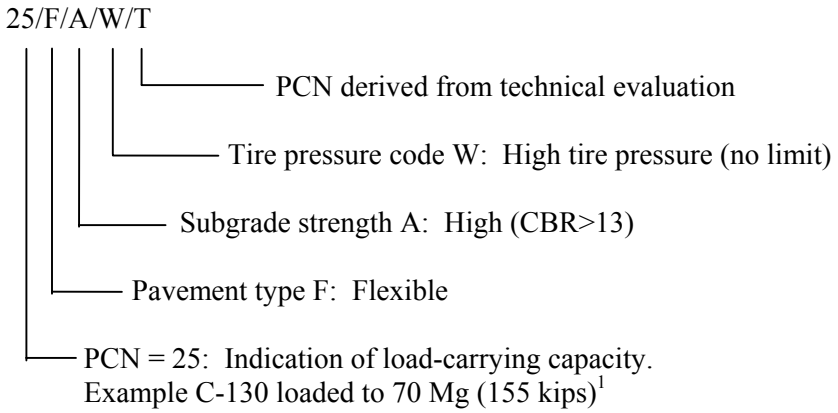
Chapter 2 of this report includes the results of the aircraft classification number-pavement classification number (ACN-PCN) analysis for use by U.S. Army Aeronautical Services Agency (USAASA), the airfield commander, and Deputy Chief of Staff for Operations and Plans (DCSOPS) personnel. Chapter 3 contains maintenance, repair, and structural improvement recommendations for use by DPW personnel and design agencies. Chapter 4 contains conclusions and recommendations in summary form. Detailed supporting data are provided in the appendices.

2 Pavement Load-Carrying Capacity

General

The load-carrying capacity is a function of the strength of the pavement, the gross weight of the aircraft, and the number of applications of the load. The method used to report pavement load-carrying capacity is the ACN-PCN system as adopted by the International Civil Aviation Organization (ICAO). The United States, as a participating member of ICAO, is required to report pavement strength in this format. The ACN-PCN format also provides the airfield evaluation information required by Army Regulation AR 95-2 (Headquarters, Department of the Army 1990).

The ACN and PCN are defined as follows: The ACN is a number which expresses the relative structural effect of an aircraft on both flexible and rigid pavements for specific standard subgrade strengths in terms of a standard single wheel load. The PCN is a number which expresses the relative load-carrying capacity of a pavement for a given pavement life in terms of a standard single wheel load. An example of a PCN five part code is as follows:



[1] Most of the dimensions and measurements reported were obtained in non-SI units. All such values have been converted using the conversion factors given in ASTM E 380.

The system works by comparing the ACN to the PCN. The PCN is a representation of the allowable load for a specified number of repetitions over the life of a pavement. The ACN is a representation of the load applied by an aircraft using the pavement. The system is structured such that an aircraft operating at an ACN (applied load) equal to or less than the PCN (allowable load) would comply with load restrictions established based on a specified design life for the pavement facility. If, however, the ACN (applied load) is greater than the PCN (allowable load), the specified design life will be shortened due to this overloading. Pavements can usually support some overload; however, pavement life is reduced. As a general rule, ACN/PCN ratios of up to 1.25 have minimal impact on pavement life. If the ACN/PCN ratio is between 1.25 and 1.50, aircraft operations should be limited to 10 passes, and the pavement inspected after each operation. Aircraft operations resulting in an ACN/PCN ratio over 1.50 should not be allowed except for emergencies.

Load-Carrying Capacity

The first step in determining the load-carrying capacity of the pavements at Biggs Army Airfield (BAAF), Fort Bliss, Texas, was to estimate the traffic to which the airfield will be subjected over the next 20 years. The traffic mix established for this airfield is shown in Table A4. The critical aircraft operating on the airfield was determined to be the B-727 aircraft at a design pass level of 88,194 for portland cement concrete (PCC) pavement and the B-747 at a design pass level of 171,488 asphalt concrete (AC) pavements as shown in Table D1. Using this traffic information, and results of the data analysis, the ACN values for the critical aircraft operating on the BAAF pavements were determined. These values are designated as the operational ACN. The operational ACN is 65/R/B/W/T for the rigid pavements and 57/F/B/W/T for the flexible pavements. (See Table D5 for description of the five component ACN or PCN code.) The numerical ACN values calculated for the critical aircraft operating on AC and PCC pavements on each of the four subgrade categories are presented in Table D2.

The critical PCN value for each airfield facility is presented in the Airfield Pavement Evaluation Chart (APEC) in Illustration 1. A summary of allowable loads and overlay requirements determined for the critical aircraft and its design pass level is shown in Table D3.

The number of passes of mobilization and contingency aircraft loadings that could be sustained by each facility is dependent on the ACN of the aircraft and the critical PCN of the facility. During wartime, many aircraft are allowed to carry heavier loads than during peacetime. This allowance means that the aircraft would have a higher ACN because of the higher loading and would cause more damage per pass than in peacetime. Also, under some contingency plans or during emergencies, heavier aircraft than those in the traffic table, see Table A4, could be considered for using the airfield pavements. These heavier aircraft would generally have higher ACN values and cause more damage than those normally using the airfield. The operational life of the pavement will be reduced if it

is subjected to aircraft loadings having ACN values higher than the PCN of the facility. An example of a procedure to determine the impact of mobilization and contingency aircraft operations is presented in Appendix D.

3 Recommendations for Maintenance, Repair, and Structural Improvements

General

Recommendations for maintenance, repair, and structural improvements are based on results from both the structural evaluation (Appendix D) and the pavement condition survey (Appendix C). Either or both the evaluation and/or the survey may indicate that a particular feature needs repair and/or improvement. If the pavement condition index (PCI) is below the required value contained in Army Regulation AR 420-72 (Headquarters, Department of the Army 2000), the pavement needs maintenance to improve its surface condition. If the ACN/ PCN ratio determined for the critical aircraft is greater than one, the pavement needs structural improvement. Where both evaluations indicate improvements are needed, the recommendations are made such that the repairs to the surface are those needed until the structural improvements can be made. If the structural improvements are made first, the surface repairs may not be necessary. The PCI, ACN/PCN, ISR rating, and recommended general maintenance alternatives for each feature are shown in Table 3-1, the Airfield Pavement Evaluation General Summary. Specific recommendations for maintenance are identified in Table 3-2.

The ISR is an information system designed to help the Army monitor some of the basic elements that affect the quality of life on installations. The ISR also supports decision-making by giving managers an objective means and a common methodology for comparing conditions across installations and across functional areas.

Recommendations for structural improvements have been defined in terms of overlays in this report. In some instances, overlays may not be the most cost effective or best engineering alternative for pavement strengthening. It should be noted that the overlay requirements shown in Table 3-2 were determined based on representative conditions at the time of testing and should be considered minimum values until verified by further investigation. These overlays should be used as a guide when programming funds for design projects. Prior to advertising an improvement project, a thorough pavement analysis and design

should be completed to select the most cost-effective improvement technique. All designs should be reviewed by the U.S. Army Corps of Engineers Transportation Systems Center to ensure that they are in accordance with current design criteria.

Recommended overlay thicknesses follow the criteria for minimum thicknesses contained in UFC 3-260-02 (Headquarters, Departments of the Army, Navy, and the Air Force 2001b). Where calculated thicknesses are greater than the required minimum thickness, the values were rounded up to the next higher 13 mm (1/2-in.).

Maintenance and repair (M&R) recommendations are based on the changes needed to provide the minimum required PCI. AR 420-72 (Headquarters, Department of the Army 2000) states that installation airfield pavements shall be maintained to at least the following PCI:

All runways > 70
Primary taxiways ≥ 60
Aprons and secondary taxiways > 55

Recommendations

Steps 1 through 5 of the flow chart shown in Figure 3-1 were used in determining the recommendations suggested in Table 3-2. The M&R alternatives suggested for the existing surfaces were selected from those listed for various distresses in flexible and rigid pavements shown in Table 3-3 and 3-4, respectively. In many instances, the performance of a specific alternative depends upon the geographical location and expertise of local contractors. Therefore, it is suggested that the local DIS personnel review all recommendations. Local costs for the approved alternatives can then be used with the Micro PAVER program to obtain a reasonable cost estimate. All overlay, repair, or major repair should be in accordance with UFC 3-269-02 (Headquarters, Departments of the Army, Navy, and the Air Force 2001b) that specifies that the following pavements be rigid pavement: all paved areas on which aircraft or helicopters are regularly parked, maintained, serviced, or preflight checked, on hangar floors and access aprons; on runway ends (305 m (1,000 ft)) of a Class B runway; primary taxiways for Class B runways; hazardous cargo, power check, compass calibration, warmup, alert, arm/disarm, holding, and washrack pads; and any other area where it can be documented that a flexible pavement will be damaged by jet blast or by spillage of fuel or hydraulic fluid.

The PCI was developed to determine maintenance and repair needs. If the PCI is low, maintenance or repair is needed to increase the PCI. If the PCI is low and the PCN is greater than the ACN, localized maintenance or repair will generally be an acceptable solution. Although these maintenance activities and repairs will improve the PCI to acceptable levels, they may not be the most cost-effective alternative. An overlay or other overall improvement may be more cost-effective than considerable localized maintenance or repairs. Certainly, if

the current PCI is less than 25, overall improvements should be investigated. When an overlay is recommended, the maintenance recommended is that which is needed to keep the pavement serviceable and safe and its PCI at the required minimum until the overlay is applied. The PCN is used to specify the structural capability of an airfield pavement. If the design aircraft's ACN is larger than the computed PCN, the pavement is structurally inadequate to support the mission traffic. If only repairs to improve the PCI are applied, the pavement could deteriorate quite rapidly. Structural improvements are required to increase the load-carrying capacity so that the PCN is greater than or equal to the ACN (aircraft load). Even if the PCI is high, structural improvements are necessary to support the mission traffic if the PCN is less than the design ACN.

The PCIs of twenty-three features (R2A, R5C, R6C, R7C, R9A, T8B, T9B, T19B, T20B, A3B, A4B, A5B, A6B, A7B, A8B, A11B, A12B, A13B, A15B, A16B, A17B, A18B, and A19B) fail to meet the minimum acceptable level outlined above. Approximately $755,000 FY03 dollars are required to upgrade features R2A, R5C, R6C, R7C, R9A, T8B, T9B, T19B, T20B, A5B, and A6B to an acceptable level. This cost estimate was determined from an analysis of the extrapolated distress quantities shown in Appendix E, the recommended maintenance, repair, and construction alternatives shown in Tables 3-3 and 3-4, and the cost-estimating guide shown in Table 3-5. This $755,000 estimate does **NOT** include recommended structural improvements **NOR** does it include maintenance and repair recommended for features with a PCI which meets the minimum requirement. Because of the density and severity of the various distresses observed in features A3B, A4B, A7B, A8B, A11B, A12B, A13B, and A15B thru A19B, maintenance and/or repair is not recommended for upgrading to an acceptable PCI level. Each feature should be reconstructed based on project usage.

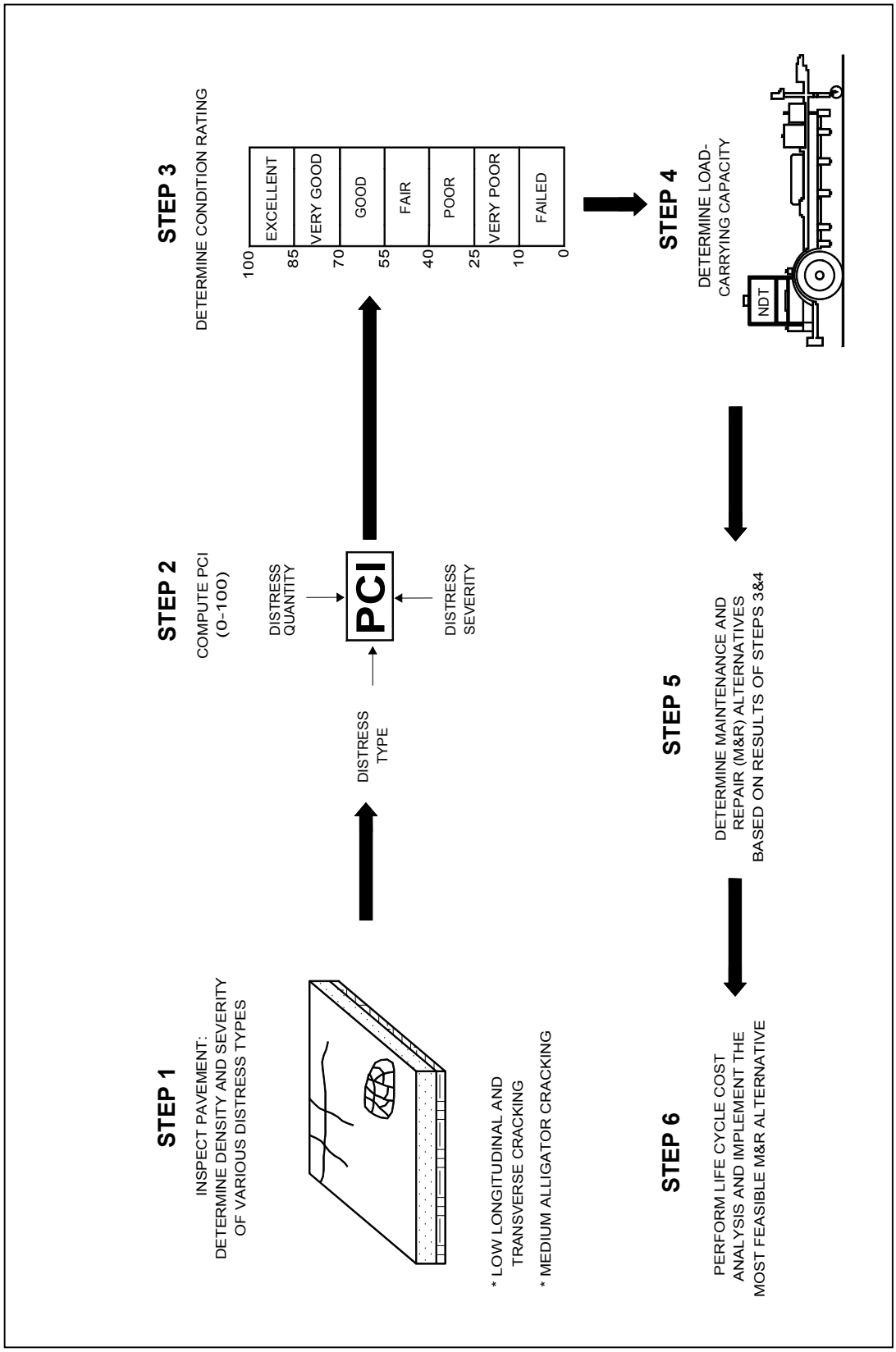


Figure 3-1. Flowchart for determination of maintenance and repair recommendations

Table 3-1
Airfield Pavement Evaluation General Summary

Pavement Feature	PCI	ACN/ PCN[2]	ISR Rating[3]	Work Classification[1]			
				Do Nothing	Maintenance	Repair	Major Repair
R1A	93	0.66	Green	X			
R2A	26	NA[4]	Red				X
R3A	80	0.59	Green		X		
R4C	87	0.57	Green	X			
R5C	70	NA[4]	Green		X		
R6A	70	NA[4]	Green		X		
R7A	69	NA[4]	Amber		X		
R8A	97	0.69	Green	X			
R9A	47	NA[4]	Red			X	
R10A	75	0.75	Green		X		
R11B	100	NA[4]	Green	X			
T1A	100	0.74	Green	X			
T2A	100	1.00	Green	X			
T3A	100	0.76	Green	X			
T4A	89	0.59	Green	X			
T5A	91	0.57	Green	X			
T6A	99	NA[4]	Green	X			
T7B	76	0.64	Green		X		
T8B	22	1.30	Red				X
T9B	45	1.37	Red			X	
T10B	100	1.12	Yellow			X	
T11A	86	0.57	Green	X			
T12A	99	0.71	Green	X			
T13A	75	0.69	Green		X		
T14A	92	0.59	Green	X			

(Continued

[1] Work is categorized for preliminary planning purposes only. Classification of work for administrative approval is an installation responsibility. Policy guidance for airfield pavements is provided in AR 420-72. *Maintenance* is usually performed on paved areas with a PCI greater than the minimum required and encompasses primarily the day-to-day routine work. Maintenance includes items such as sealing cracks and joints, repairing potholes, patching, repairing spalls, and applying rejuvenators. *Repair* is the restoration of a failed or rapidly deteriorating section of pavement to a good or excellent condition to such that it may be utilized for its designated purpose. Repair is usually applied to pavements with a PCI less than the minimum required. Examples are: recycling, overlays, slab replacement, and repairing drainage structures. *Major repair (construction)* relates to the alteration, extension, replacement, or upgrading of an existing facility. Major repair examples include: widening or lengthening a surfaced area, strengthening a pavement to support a new mission, and replacement of an entire facility.

[2] Determined for design aircraft.

[3] Based on the PCI and ACN/PCN ratio of the pavement feature.

[4] Features were not evaluated for load because the outside edges do not receive aircraft traffic.

Table 3-1 (Concluded)

Pavement Feature	PCI	ACN/ PCN[2]	ISR Rating[3]	Work Classification[1]			
				Do Nothing	Maintenance	Repair	Major Repair
T15A	100	NA[4]	Green	X			
T16A	100	0.71	Green	X			
T17A	98	0.71	Green	X			
T18C	100	0.59	Green	X			
T19B	40	1.41	Red				X
T20B	0	2.17	Red				X
A1B	100	0.96	Green	X			
A2B	84	0.59	Green		X		
A3B	10	3.24	Red				X
A4B	3	3.57	Red				X
A5B	37	1.7	Red			X	
A6B	42	1.24	Red			X	
A7B	17	5.70	Red				X
A8B	42	1.78	Red				X
A9B	74	1.54	Amber			X	
A10B	100	0.66	Green	X			
A11B	8	1.42	Red				X
A12B	20	1.79	Red				X
A13B	25	13.00	Red				X
A14B	76	1.70	Red			X	
A15B	11	2.72	Red				X
A16B	16	1.24	Red				X
A17B	23	2.83	Red				X
A18B	19	1.24	Red				X
A19B	23	57.0	Red				X
A20B	98	1.24	Amber	X			
A21B	100	0.37	Green	X			

[1] Work is categorized for preliminary planning purposes only. Classification of work for administrative approval is an installation responsibility. Policy guidance for airfield pavements is provided in AR 420-72. *Maintenance* is usually performed on paved areas with a PCI greater than the minimum required and encompasses primarily the day-to-day routine work. Maintenance includes items such as sealing cracks and joints, repairing potholes, patching, repairing spalls, and applying rejuvenators. *Repair* is the restoration of a failed or rapidly deteriorating section of pavement to a good or excellent condition to such that it may be utilized for its designated purpose. Repair is usually applied to pavements with a PCI less than the minimum required. Examples are: recycling, overlays, slab replacement, and repairing drainage structures. *Major repair (construction)* relates to the alteration, extension, replacement, or upgrading of an existing facility. Major repair examples include: widening or lengthening a surfaced area, strengthening a pavement to support a new mission, and replacement of an entire facility.

[2] Determined for design aircraft.

[3] Based on the PCI and ACN/PCN ratio of the pavement feature.

[4] Features were not evaluated for load because the outside edges do not receive aircraft traffic.

Table 3-2
Summary of Overlay and Maintenance Requirements for the Day-to-Day Traffic Operations

Feature	Area Sq m (sq yd)	Overlay Requirements, mm (in.)[1] AC	PCC Partial Bond	PCC with no Bond	Maintenance and Repair Alternatives for Existing Surfaces
Runway 3-21					
R1A[2]	7469 (6,667)	0 (0.0)	0 (0.0)	0 (0.0)	None required.
R2A[2,3]	1157 (3,333)	--	--	--	The PCI of this feature is below that required for runways. Crack sealing and/or patching is not recommended. PCC reconstruction is recommended if this feature is to withstand the projected traffic.
R3A[2]	17 131 (15,555)	0 (0.0)	0 (0.0)	0 (0.0)	Clean all cracks, remove all loose material, and seal cracks with an approved sealer[4] (see the PCASE on-line FACT SHEET web site for product guidance). Repair low-medium- and high severity spalls with an epoxy patch or full-depth patch. Remove and replace shattered slabs.
R4C	102 860 (123,022)	0 (0.0)	0 (0.0)	0 (0.0)	None required.
R5C	19 941 (23,850)	--	--	--	Clean all cracks, remove all loose material, and seal the entire area with an approved bituminous pavement sealer[4] (see the PCASE on-line FACT SHEET web site for product guidance).
R6C	19 036 (22,767)	--	--	--	Same as for R5C.
R7C	11 562 (13,828)	--	--	--	Same as for R5C.
R8A[2]	15 757 (18,846)	0 (0.0)	0 (0.0)	0 (0.0)	None required.
R9A[2,3]	9290 (11,111)	--	--	--	The PCI of this feature is below that required for runways. Clean all cracks, remove all loose material, and seal cracks with an approved sealer[4] (see the PCASE on-line FACT SHEET web site for product guidance). Remove and replace shattered slabs.
R10A[2]	18 582 (22,222)	0 (0.0)	0 (0.0)	0 (0.0)	Clean all cracks, remove all loose material, and seal cracks with an approved sealer[4] (see the PCASE on-line FACT SHEET web site for product guidance).
R11B[2]	3715 (4,444)	0 (0.0)	0 (0.0)	0 (0.0)	None required.
Taxiway H					
T1A[2]	33 075 (39,558)	0 (0.0)	0 (0.0)	0 (0.0)	None required.
Taxiway J					
T2A[2]	20 596 (24,633)	0 (0.0)	0 (0.0)	0 (0.0)	None required.

(Sheet 1 of 5)

[1] For planning purposes only.
[2] UFC 3-260-02 (Headquarters, Departments of the Army, Navy, and the Air Force 2001b) requires that the surface be concrete.
[3] Edges were not evaluated for load-carrying capacity.
[4] See TM 5-882-11/AFP 88-6, Chapter 7 (Headquarters, Departments of the Army and Air Force 1993) for guidance.

Table 3-2 (Continued)

Feature	Area Sq m (sq yd)	Overlay Requirements, mm (in.)[1] AC	PCC Partial Bond	PCC with no Bond	Maintenance and Repair Alternatives for Existing Surfaces
Taxiway I					
T3A[2]	3345 (11,458)	0 (0.0)	0 (0.0)	0 (0.0)	None required.
Taxiway A					
T4A[2]	44 857 (53,650)	0 (0.0)	0 (0.0)	0 (0.0)	None required.
Taxiway B					
T5A[2]	29 240 (34,972)	0 (0.0)	0 (0.0)	0 (0.0)	None required.
T6A[2]	13 819 (16,528)	--	--	--	None required.
Taxiway G					
T7B[2]	3251 (3,889)	0 (0.0)	0 (0.0)	0 (0.0)	Clean all cracks, remove all loose material, and seal cracks with an approved sealer[4] (see the PCASE on-line FACT SHEET web site for product guidance).
Taxiway F					
T8B	4645 (5,556)	51 (2.0)	NA	See[5]	Clean all cracks, remove all loose material, and seal the entire area with an approved bituminous pavement sealer[4] (see the PCASE on-line FACT SHEET web site for product guidance). Structural improvements are required to withstand the projected traffic.
T9B	26 830 (32,089)	64 (2.5)	NA	See[5]	Same as for T8B.
Taxiway K					
T10B	11 334 (13,556)	0.0	152 (6.0)	152 (6.0)	The PCI of this feature is above that required for taxiways. Overlays for this feature are less than minimum requirements. Since the PCI rating is excellent, structural improvement at this time is not recommended. However, this feature should be reevaluated in about 5 years to reassess the need for overlay.
Taxiway C					
T11A[2]	3831 (4,583)	0 (0.0)	0 (0.0)	0 (0.0)	None required.
T12A[2]	10 842 (12,967)	0 (0.0)	0 (0.0)	0 (0.0)	None required.

(Sheet 2 of 5)

[1] For planning purposes only.
[2] UFC 3-260-02 (Headquarters, Departments of the Army, Navy, and the Air Force 2001b) requires that the surface be concrete.
[3] Edges were not evaluated for load-carrying capacity.
[4] See TM 5-882-11/AFP 88-6, Chapter 7 (Headquarters, Departments of the Army and Air Force 1993) for guidance.
[5] Was not calculated because feature was evaluated as a flexible pavement.

Table 3-2 (Continued)

Feature	Area Sq m (sq yd)	Overlay Requirements, mm (in.)[1] AC	PCC Partial Bond	PCC with no Bond	Maintenance and Repair Alternatives for Existing Surfaces
Taxiway C (Continued)					
T13A[2]	10 451 (12,500)	0 (0.0)	0 (0.0)	0 (0.0)	Clean all cracks, remove all loose material, and seal cracks with an approved sealer[4] (see the PCASE on-line FACT SHEET web site for product guidance).
T14A[2]	7548 (9,028)	0 (0.0)	0 (0.0)	0 (0.0)	None required.
T15A[2,3]	3824 (4,574)	0 (0.0)	0 (0.0)	0 (0.0)	None required.
T16A[2]	7358 (8,800)	0 (0.0)	0 (0.0)	0 (0.0)	None required.
Taxiway D					
T17A[2]	39 836 (47,644)	0 (0.0)	0 (0.0)	0 (0.0)	None required.
Taxiway E					
T18C[2]	5722 (6,844)	0 (0.0)	0 (0.0)	0 (0.0)	None required.
North Apron Washrack Taxiway					
T19B	1393 (1,667)	0 (0.0)	152 (6.0)	165 (6.5)	The PCI of this feature is below that required for taxiways and it is structurally inadequate to support the design traffic. Crack sealing and/or patching is not recommended. PCC reconstruction is recommended if this feature is to withstand the projected traffic.
North Apron Hardstand Taxiway					
T20B	3405 (3,833)	127 (5.0)	NA	See[5]	The PCI of this feature is below that required for taxiways and it is structurally inadequate to support the design traffic. Crack sealing and/or patching is not recommended. Reconstruction is recommended if this feature is to withstand the projected traffic.
DAACG Ramp					
A1B[2]	113 681 (135,964)	0 (0.0)	0 (0.0)	0 (0.0)	None required.
Southwest Warm-up Apron					
A2B[2]	19 741 (23,611)	0 (0.0)	0 (0.0)	0 (0.0)	The PCI of this feature is above that required for aprons. However, it is recommended that the joints be cleaned and sealed with approved sealer[4] (see the PCASE on-line FACT SHEET web site for product guidance).

(Sheet 3 of 5)

[1] For planning purposes only.
[2] UFC 3-260-02 (Headquarters, Departments of the Army, Navy, and the Air Force 2001b) requires that the surface be concrete.
[3] Edges were not evaluated for load-carrying capacity.
[4] See TM 5-882-11/AFP 88-6, Chapter 7 (Headquarters, Departments of the Army and Air Force 1993) for guidance.
[5] Was not calculated because feature was evaluated as a flexible pavement.

Table 3-2 (Continued)

Feature	Area Sq m (sq yd)	Overlay Requirements, mm (in.)[1] AC	PCC Partial Bond	PCC with no Bond	Maintenance and Repair Alternatives for Existing Surfaces
West Apron Extension					
A3B[2]	37 272 (44,578)	457 (18.0)	305 (12.0)	368 (14.5)	The PCI of this feature is below that required for aprons and it is structurally inadequate to support the design traffic. Crack sealing and/or patching is not recommended. PCC reconstruction is recommended if this feature is to withstand the projected traffic.
Hangar Apron					
A4B[2]	4700 (5,622)	559 (22.0)	356 (14.0)	432 (17.0)	Same as for A3B.
A5B[2]	2877 (3,452)	178 (7.0)	216 (8.5)	318 (12.5)	The PCI of this feature is below that required for aprons and it is structurally inadequate to support the design traffic. Repair low-medium- and high severity spalls with an epoxy patch or a full-depth patch. Replace joint sealant with a high quality sealer[4]. PCC reconstruction is recommended if this feature is to withstand the projected traffic.
A6B[2]	1626 (1,944)	0 (0.0)	152 (6.0)	191 (7.5)	Same as for A5B.
Operational Apron					
A7B[2]	37 625 (45,000)	343 (13.5)	NA	See[5]	The PCI of this feature is below that required for aprons and it is structurally inadequate to support the design traffic. Crack sealing and/or patching is not recommended. PCC reconstruction is recommended if this feature is to withstand the projected traffic.
A8B[2]	114 732 (137,222)	127 (5.0)	NA	See[5]	Same as for A7B.
Heavy Ramp					
A9B[2]	65 459 (78,290)	114 (4.5)	178 (7.0)	267 (10.5)	The PCI of this feature is above that required for aprons. However, it is recommended that the joints be cleaned and sealed with an approved sealer[4] (see the PCASE on-line FACT SHEET web site for product guidance). Structural improvements are required.
T4D Apron					
A10B[2]	16 595 (19,847)	0 (0.0)	0 (0.0)	0 (0.0)	None required.
Hardstands 10-24					
A11B[2]	9406 (11,250)	64 (2.5)	191 (7.5)	292 (11.5)	Same as for A3B.
A12B[2]	6271 (7,500)	127 (5.0)	NA	See[5]	Same as for A7B

(Sheet 4 of 5)

[1] For planning purposes only.
[2] UFC 3-260-02 (Headquarters, Departments of the Army, Navy, and the Air Force 2001b) requires that the surface be concrete.
[3] Edges were not evaluated for load-carrying capacity.
[4] See TM 5-882-11/AFP 88-6, Chapter 7 (Headquarters, Departments of the Army and Air Force 1993) for guidance.
[5] Was not calculated because feature was evaluated as a flexible pavement.

Table 3-2 (Concluded)

Feature	Area Sq m (sq yd)	Overlay Requirements, mm (in.)[1] AC	PCC Partial Bond	PCC with no Bond	Maintenance and Repair Alternatives for Existing Surfaces
East Parking Apron					
A13B[2]	75 598 (90,417)	343 (13.5)	NA	See[5]	Same as for A7B
North Apron Washrack					
A14B[2]	4078 (4,877)	711 (28.0)	406 (16.0)	457 (18.0)	The PCI of this feature is above that required for aprons. However, it is recommended that the joints be cleaned and sealed with approved sealer[4] (see the PCASE on-line FACT SHEET web site for product guidance). Structural improvements are required.
North Parking Apron					
A15B[2]	6155 (7,362)	864 (34.0)	419 (16.5)	457 (18.0)	The PCI of this feature is below that required for aprons and it is structurally inadequate to support the design traffic. Crack sealing and/or patching is not recommended. PCC reconstruction is recommended if this feature is to withstand the projected traffic.
A16B[2]	3832 (4,583)	597 (23.5)	356 (14.0)	394 (15.5)	Same as for A15B.
A17B[2]	2826 (3,380)	826 (32.5)	419 (16.5)	457 (18.0)	Same as for A15B.
A18B[2]	1916 (2,292)	597 (23.5)	368 (14.5)	394 (15.5)	Same as for A15B.
A19B[2]	13 945 (16,678)	356 (14.0)	NA	See[5]	The PCI of this feature is below that required for aprons and it is structurally inadequate to support the design traffic. Crack sealing and/or patching is not recommended. PCC reconstruction is recommended if this feature is to withstand the projected traffic.
Hot Cargo Ramp					
A20B[2]	34 782 (41,600)	0 (0.0)	152 (6.0)	203 (8.0)	The PCI of this feature is above that required for aprons. Overlays for this feature are less than minimum requirements. Since the PCI rating is excellent, structural improvement at this time is not recommended. However, this feature should be reevaluated in about 5 years to reassess the need for overlay.
Northeast Warm-up Apron					
A21B[2]	12 393 (14,822)	0 (0.0)	0 (0.0)	0 (0.0)	None required.

(Sheet 5 of 5)

[1] For planning purposes only.
[2] UFC 3-260-02 (Headquarters, Departments of the Army, Navy, and the Air Force 2001b) requires that the surface be concrete.
[3] Edges were not evaluated for load-carrying capacity.
[4] See TM 5-882-11/AFP 88-6, Chapter 7 (Headquarters, Departments of the Army and Air Force 1993) for guidance.
[5] Was not calculated because feature was evaluated as a flexible pavement.

Table 3-3
Maintenance, Repair, and Major Repair Alternatives for Airfield Pavements, Flexible

	Maintenance				Repair												Major Repair		
Distress Type	Seal Minor Cracks	Repair Pot-Holes	Partial-Depth Patching	Apply Rejuve-nators[1]	Seal Major Cracks	Full-Depth Patching	Micro-Surfacing	Slurry Seal[2]	Thin AC Overlays[3]	Surface Milling	Grooving	Porous Friction Course	Repair Drainage Facilities[4]	Surface Recycling	AC Structural Overlay[3]	PCC Structural Overlay	Remove Existing Surface and Reconstruct	Hot Recycle	Cold Recycle
Alligator cracking	L	M,H	M			M,H	L	L					L,M,H		M,H	M,H	H		
Bleeding										A				A			A	A	A
Block cracking	L,M			L	M,H		L,M	L						M	M,H			M,H	M,H
Corrugation			L,M			L,M,H	L,M		M,H	L,M							M,H		
Depression			L,M,H			M,H	L		M,H				L,M,H				H		
Jet blast				A		A	A		A										
Reflection cracking	L,M				M,H		L,M	L							M,H			H	
Longitudinal and transverse cracking	L,M				M,H		L,M	L							M,H			H	
Oil spillage			A			A			A	A				A			A	A	
Patching	L,M		M		M	M,H									M,H		H	H	
Polished aggregate							A	A	A	A	A	A		A					
Raveling/weathering		M,H		L,M		M	L,M	L	M,H	M				M,H		H	H	M,H	
Rutting			L,M			L,M,H	L						L,M,H		M,H	H	H	M,H	
Shoving			L			L,M				L,M							M,H	M,H	
Slippage cracking	A		A		A	A									A		A	A	
Swell			L,M			M,H				L,M			L,M,H				H		

Note: L = low severity level; M = medium severity level; H = high severity level; A = no severity levels for this distress.

[1] Not to be used on high speed areas due to increased skid potential.

[2] Not to be used on heavy traffic areas.

[3] Patch distressed areas prior to overlay.

[4] Drainage facilities to be repaired as needed.

Table 3-4
Maintenance, Repair, and Major Repair Alternatives for Airfield Pavements, Rigid

	Maintenance				Repair											Major Repair	
Distress Type	Seal Minor Cracks	Joint Seal	Partial Patch	Epoxy Patch	Seal Major Cracks	Full-Depth Patch	Under Sealing	Slab Grind-ing	Surface Milling	AC Overlay	PCC Overlay	Slab Replace-ment	Crack & Seat with AC Struc-tural Overlay	AC Overlay w/ Geotextile	Repair/ Install Surface/ Subsurface Drainage System[1]	PCC Recycling	Remove Existing PCC and Reconstruct
Blowup			L,M			M,H						H					
Corner break	L			M,H	M,H	M,H						H					
Longitudinal/ Transverse/ Diagonal cracking	L,M				M,H					H	H	H	M,H	H	L,M,H	H	H
D cracking	L		M,H		M,H	H						H				H	H
Joint seal damage		M,H															
Patching (small) <5 ft[2]	L,M		M	L,M	M,H	M,H						H					
Patching/utility cut	L,M		M	L,M	M,H	M,H						H					H
Popouts[2]				A						A	A						
Pumping	A	A			A		A								A		
Scaling/map cracking			M,H					M,H		M,H	M,H						
Fault/settlement		L,M					M,H	L,M	M,H						L,M,H		
Shattered slab	L				L,M					M,H	M,H	M,H		H	L,M,H	H	H
Shrinkage crack[3]																	
Spalling (joints)		L	L,M	L,M,H	M,H	M,H											
Spalling (corner)			L,M	L,M	M,H	M,H											

Note: L = low severity level; M = medium severity level; H = high severity level; A = no severity levels for this distress.

[1] Drainage facilities to be repaired as needed.

[2] Popouts normally do not require maintenance.

[3] Shrinkage cracks normally do not require maintenance.

Table 3-5
Airfield Pavements M&R Cost Estimating Guide

Item	Description	U/M	Unit Cost ($)					
			FY03	FY04	FY05	FY06	FY07	FY08
1	Remove/replace 10 in. PCC w/14 in. PCC including 6 in. base	SY	76.80	78.71	80.68	82.69	84.76	86.88
2	PCC Construction	SY-IN	3.92	4.02	4.12	4.22	4.33	4.44
3	Remove/replace 6 in. Bituminous Pavement w/14 in. PCC including 6 in. base	SY	70.41	72.17	73.97	75.82	77.71	79.65
4	Asphalt Concrete Overlay							
	-- Airfield Mix	TONS	54.21	55.57	56.95	58.38	59.83	61.32
		SY-IN	2.94	3.01	3.09	3.17	3.24	3.33
	-- Highway Mix	TONS	49.92	51.17	52.45	53.76	60.23	61.73
		SY-IN	2.71	2.78	2.85	2.92	2.99	3.07
5	Joint Resealing (JFR)	LF	2.30	2.36	2.42	2.48	2.54	2.61
6	Joint Resealing (NON - JFR)	LF	2.05	2.10	2.15	2.20	2.26	2.32
7	Crack Routing/Sealing (PCC)	LF	2.83	2.90	2.97	3.04	3.12	3.20
8	Neoprene Compression Joint Seal							
	-- Saw Cutting Only	LF	1.43	1.47	1.50	1.54	1.58	1.62
	-- Lubrication, Furnish and Install Compression Seal							
	-- 1/2-in. wide joint	LF	3.55	3.64	3.73	3.82	3.92	4.02
	-- 5/8-in. wide joint	LF	3.94	4.04	4.14	4.24	4.35	4.46
	-- 3/4-in. wide joint	LF	4.84	4.96	5.09	5.22	5.35	5.48
9	Spall Repairs (Epoxy-Bonded PCC)	SF	27.25	27.93	28.63	29.34	30.08	30.83
10	PCC Pavement Removal (To Base Course) T < 12 in.	SY-IN	1.09	1.12	1.15	1.18	1.21	1.24
11	PCC Pavement Removal (To Base Course) T > 12 in.	SY-IN	1.53	1.57	1.61	1.65	1.69	7.73
12	Asphalt Pavement Removal (to base course)	SY-IN	0.99	1.01	1.04	1.07	1.09	1.12
13	Base/Subgrade Removal	SY-IN	0.66	0.66	0.69	0.70	0.72	0.74
14	Asphalt Milling/Profiling/Grinding (Cold)							
	-- up to 1-in. depth	SY	1.68	1.72	1.77	1.81	1.86	1.91
	-- up to 2-in. depth	SY	2.43	2.49	2.55	2.61	2.68	2.75
	-- up to 3-in. depth	SY	2.56	2.62	2.69	2.76	2.83	2.90
	-- up to 4-in. depth	SY	2.69	2.76	2.83	2.90	2.97	3.05
	-- small difficult jobs (hard agg. etc.)	SY-IN	3.20	3.28	3.36	3.44	3.53	3.62
15	PC Concrete Grinding/Profiling (Normally 1/2 in. is max Feasible)	SY-IN	20.48	20.99	21.52	22.06	22.61	23.18
16	Heater-Scarification (3/4—in.) – rejuvenation	SY	1.42	1.46	1.49	1.53	1.56	1.60
17	Cold Recycling 6 in. AC with 4-in.-thick AC O/L	SY	18.80	19.27	19.75	20.24	20.75	21.27
18	Slurry Seal	SY	1.69	1.73	1.78	1.82	1.87	1.92

(Continued)

Table 3-5 (Concluded)

Item	Description	U/M	Unit Cost ($)					
			FY03	FY04	FY05	FY03	FY04	FY05
19	Micro-Surfacing	SY	2.43	2.49	2.55	2.61	2.68	2.75
20	Single Bituminous Surface Treatment	SY	2.05	2.10	2.15	2.20	2.26	2.32
21	Double Bituminous Surface Treatment	SY	2.96	3.03	3.11	3.19	3.27	3.35
22	Rubberized Coal Tar Pitch Emulsion Sand Slurry Surface Treatment	SY	1.85	1.90	1.94	1.99	2.04	2.09
23	Rubberized Coal Tar Pitch Emulsion (No Aggregate)	SY	1.22	1.25	1.28	1.31	1.34	1.38
24	Fog Seal	SY	0.83	0.85	0.87	0.89	0.91	0.94
25	Rubberized Asphalt Systems							
	-- Stress Absorbing Membrane (SAM) Interlayer	SY	4.74	4.86	4.98	5.10	5.23	5.36
	-- SAM Seal Coat (uncoated chips)	SY	5.00	5.13	5.25	5.38	5.52	5.65
	-- SAM Seal Coat (precoated chips)	SY	5.37	5.50	5.64	5.78	5.93	6.07
26	Reinforcing Fabric Membranes (including tack coat)	SY	2.66	2.73	2.79	2.86	2.93	3.00
27	Elastomeric Inlay installed in Existing PCC, Complete (2 ft Wide X 100 ft Long X 2 in. Deep)	EA	26.9K	27.6K	28.3K	29.0K	29.7K	30.5K
28	PC Concrete Inlay (20 ft X 120 ft X 12 in. in Asphalt Pavement)	EA	19.2K	19.7K	20.2K	20.7K	21.2K	21.8K
29	Runway Grooving							
	-- Asphalt Concrete Pavement	SY	2.05	2.10	2.15	2.20	2.26	2.32
	-- Portland Concrete Pavement	SY	4.48	4.59	4.71	4.83	4.95	5.07
30	Runway Rubber Removal (High Pressure Water Blasting Method)	SF	0.063	0.065	0.066	0.068	0.069	0.071
31	Paint Removal							
	-- Partial Removal (Remove only loose, flaking, or poorly bonded paint)	SF	0.063	0.065	0.066	0.068	0.069	0.071
	-- Complete Removal (Using High Pressure water with sand injection)	SF	0.74	0.76	0.78	0.80	0.82	0.84
32	Airfield Marking							
	-- Reflectorized	SF	0.50	0.51	0.53	0.54	0.56	0.57
	-- Non-Reflectorized	SF	0.28	0.29	0.29	0.30	0.30	0.31
33	Street Marking							
	-- Reflectorized	SF	0.36	0.37	0.38	0.39	0.40	0.41
	-- Non-Reflectorized	SF	0.23	0.24	0.24	0.25	0.25	0.26
34	Random Slab Replacement							
	-- 12 ft by 12 ft by 12-in. thick	EA	1.3K	1.3K	1.4K	1.4K	1.5K	1.5K
	-- 25 ft by 25 ft by 12-in. thick	EA	5.2K	5.3K	5.5K	5.6K	5.8K	5.9K
	-- 25 ft by 25 ft by 18-in. thick	EA	7.6K	7.8K	8.0K	8.2K	8.4K	8.6K
	-- 25 ft by 25 ft slab	SY-IN	5.99	6.14	6.29	6.45	6.61	6.77
35	Soil Cement Stabilization (10 percent by weight)	SY-IN	0.54	0.55	0.57	0.58	0.60	0.61

4 Conclusions

The maintenance and rehabilitation alternatives discussed in Chapter 3 and summarized in Table 3-2 should be performed as soon as possible to retain the full benefit of the structural capacity of the existing pavements. The M & R alternatives suggested for the existing surfaces were selected from the alternatives listed for the various distresses shown in Tables 3-3 and 3-4. In many instances the performance of a specific alternative is dependent upon local conditions and contractors.

The operational ACN for the airfield rigid pavement facilities is 65/R/B/W/T and for the flexible pavement facilities 57/F/B/W/T. PCNs for each facility are shown in Illustration 1. ISR ratings based on the ACN/PCN ratios and the PCIs of each respective facility are shown in Illustration 2. The PCI of each feature is summarized in Table 3-1.

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Appendix A
Background Data

Description of the Airfield

BAAF is located at Fort Bliss, Texas, in El Paso County, El Paso, Texas. The airfield is located physiologically in the Huaco Basin, a feature of the Mexican Highland section of the Basin and Range Province of the Intermontane Plains. The soils in the area are generally reddish, slightly clayey silty sands with caliche at lower depths.

The elevation of the airfield is 1202 m (3946 ft) above mean sea level. The climatological data used herein were obtained from the U.S. Air Force Combat Climatology Center (AFCCC) Ashville, NC, from data collected at the weather station at El Paso International Airport, TX. Temperature and precipitation data are summarized in Table A1. These data reflect an average annual temperature of 18°C (64°F) and an average yearly high of 26°C (78°F). The annual rainfall in the area is about 220 mm (8.7 in.).

A layout of the airfield pavements is shown in Figure A1. Pavement feature identifications and locations are shown in Figure A2. In June 2002 the airfield consisted of a NE-SW runway (3-21), which was 4069 m (13,350 ft) long and 46 m (150 ft) wide; connecting taxiways; two warm-up aprons; ten parking aprons; and a washrack.

Previous Reports

Pertinent data for use in this evaluation were extracted from the previous reports listed below:

a. U.S. Army Engineer Waterways Experiment Station, "Airfield Pavement Evaluation, Biggs Army Airfield, Fort Bliss, Texas," Miscellaneous Paper GL-93-22, October 1993, Vicksburg, MS.

b. U.S. Army Engineer Waterways Experiment Station, "Airfield Pavement Condition Survey, Biggs Army Airfield Fort Bliss, Texas," Miscellaneous Paper GL-90-8, June 1990, Vicksburg, MS.

c. U.S. Army Engineer Waterways Experiment Station, "Airfield Pavement Evaluation, Biggs Army Airfield Fort Bliss, Texas," Miscellaneous Paper GL-85-20, September 1985, Vicksburg, MS.

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f. U.S. Army Albuquerque, District, "Airfield Evaluation Report Biggs Air Force Base, Texas," December 1960, Albuquerque, NM.

g. U.S. Army Albuquerque District, "Pavement Evaluation Report, Biggs Air Force Base, Texas," December 1959, Albuquerque, NM.

h. U.S. Army Albuquerque District, "Airfield Pavement Evaluation, Runway Primary Widen, Biggs Air Force Base," June 1957, Albuquerque, NM.

i. U.S. Army Albuquerque District, "Pavement Report, North Warm-Up Pad, Biggs Air Force Base, El Paso, Texas," February, 1956, Albuquerque, NM.

j. U.S. Army Albuquerque District, "Airfield Pavement Evaluation, Aircraft Washrack & Calibration Yard, Biggs Air Force Base, Texas," May 1955, Albuquerque, NM.

k. U.S. Army Albuquerque District, "Airfield Pavement Evaluation, Apron, Parking for Tow Target Squadron Apron, Extension, Parking for Strategic Support Squadron FY 1952, Airfield Pavements, Biggs Air Force Base," April 1955, Albuquerque, NM.

Design and Construction History

The original pavements at BAAF were constructed from 1942-1945. Upgrading of the pavements, including new construction, reconstruction, or strengthening of the existing facilities was performed at various periods from 1945 to the present. Figure A2 presents a layout of the airfield facilities showing the locations of the various pavement features. Table A2 presents the history of the major construction activities at BAAF. Table A3 contains a summary of the physical property data of the various features.

The major construction projects at BAAF are summarized as follows:

a. *1942-1945 construction*. Construction completed at this time included the Northeast-Southwest runway (3-21), the East-West runway (now Taxiway A), the North-South runway (now Taxiway C), connecting taxiways, one parallel taxiway, and the Operational Apron, all of which were flexible pavement. The East and West Apron Extension of the Operational Apron and the three turning pads were constructed of 203 mm (8.0 in.) portland cement concrete (PCC). The construction completed at West Biggs (now the DAACG Ramp) during this period, which was mostly of flexible pavement, consisted of two taxiways and a maintenance parking apron. A hangar apron was constructed of 152 mm (6.0 in.) PCC.

b. *1945-1956 construction*. The second major construction period included the overlaying, reconstructing, and widening of the original pavements and the construction of flexible- and rigid-type pavements. The flexible pavement construction included 2 parking aprons, 27 parking hardstands, 3 connecting taxiways, 1 primary taxiway, 2 warm-up aprons, and 762 m (2500 ft) of runway extensions. The rigid pavement construction consisted of a heavy-bomber hangar apron, which was constructed of 330 mm (13 in.) PCC and a 227 mm (9 in.) PCC overlay on a portion of the 203 mm (8.0 in.) PCC west apron extension; a 381 mm (15 in.) PCC washrack; a 406 mm (16 in.) PCC calibration hardstand; and two 178 mm (7 in.) PCC parking aprons. These latter two aprons were located at West Biggs. The flexible pavement widening consisted of a 15 m (50 ft) widening of Taxiway T-4 and a 15 m (50 ft) widening of the southeast side and 30 m (100 ft) widening of the northwest side of the northeast-southwest runway. On the southeast side of the runway, in addition to the 15 m (50 ft) widening, the construction also included a 12 m (40 ft) wide overlay of the outer edge of the runway adjacent to the widened pavement. The strengthened pavements (Taxiways T-1 (B), T-1A (A), and T-3 (C)) were 152 mm (6 in.) asphaltic-concrete (AC) overlays on the existing pavements.

c. *1956-1959 construction*. The third construction period included some reconstruction and overlaying of original pavements and the construction of flexible and rigid pavements. These latter pavements consisted of 483, 432, and 406 mm (19, 17, and 16 in.) PCC runway extension; a 183 mm (19 in.) PCC primary and ladder taxiway; three 406 mm (16 in.) PCC parking hardstands; a 227 mm (9 in.) PCC hardstand apron, with a thickened edge of 279 mm (11 in.); a 432 mm (17 in.) PCC warm-up apron, with a thickened edge of 533 mm (21 in.); and a 635 mm (25 in.) PCC heavy-bomber alert taxiway and apron. Most of the reconstructed pavements were 635 mm (25 in.) PCC for the taxiways and warm-up apron, and 508 and 635 mm (20 and 25 in.) PCC for the runway. One portion of the primary taxiway system (T-3) consisted of 227 mm (9 in.) prestressed, 483 mm (19 in.) reinforced, and 610 mm (24 in.) plain concrete pavement sections. The first 91 m (300 ft) of the southwest (03) end of the northeast-southwest runway, a 305-203-305 mm (12-8-12 in.)

washrack, and a 76 mm (3 in.) AC overlay on a portion of the operational apron were constructed under the supervision of the installation engineer.

d. *1980-1983 construction*. The Operational Apron (A7B and A8B) was overlaid with 51 mm (2.0 in.) of AC.

e. *1996-2000 construction*. Repairs were made to the Northeast and Southwest ends of Runway 3-21. Taxiway A (T6A) was widened 8 m (25 ft) on the north edge and Taxiway C (Features T12A and T16A) was recon-0structed with 508 mm (20.0 in.) of PCC. Taxiways D, E, H, I, and the Northeast Warm-up Apron was removed and reconstructed with 508 mm (20.0 in.) of PCC. Old Taxiway T-4D was removed and replaced with Parking Apron T4D.

f. *2002 construction*. The DAACG Apron was constructed of 406 mm (16.0 in.) PCC. Taxiway J was constructed of 393 mm (15.5 in.) PCC. Taxiway K and the Hot Cargo Apron were constructed of 368 mm (14.5 in.) PCC.

Traffic History

The airfield manager provided traffic records for BAAF at the time of this evaluation for the 1-year period January 2001 through December 2001. The total number of operations during this time period was 33,857 operations. Currently utilizing the facilities are both fixed-wing and rotary-wing aircraft. Frequencies of operation for the various aircraft are presented in Table A4. As shown in Table A4, aircraft utilizing the airfield are primarily the AN-124, C-130, C-141, C-17, C-5A, B-727, B-747, B-757, KC-10, and KC-135.

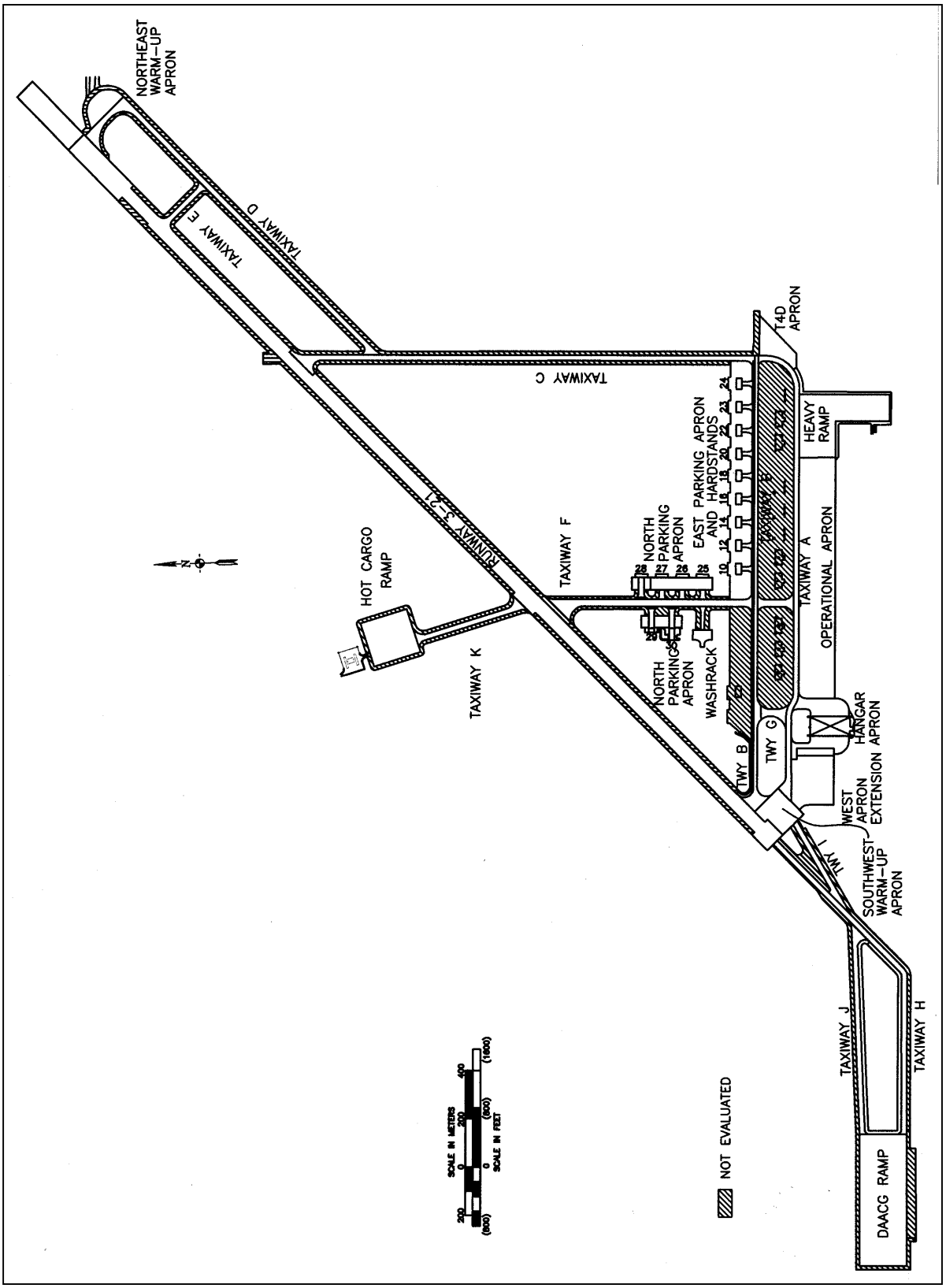

Figure A1. Layout of airfield and facility identifications

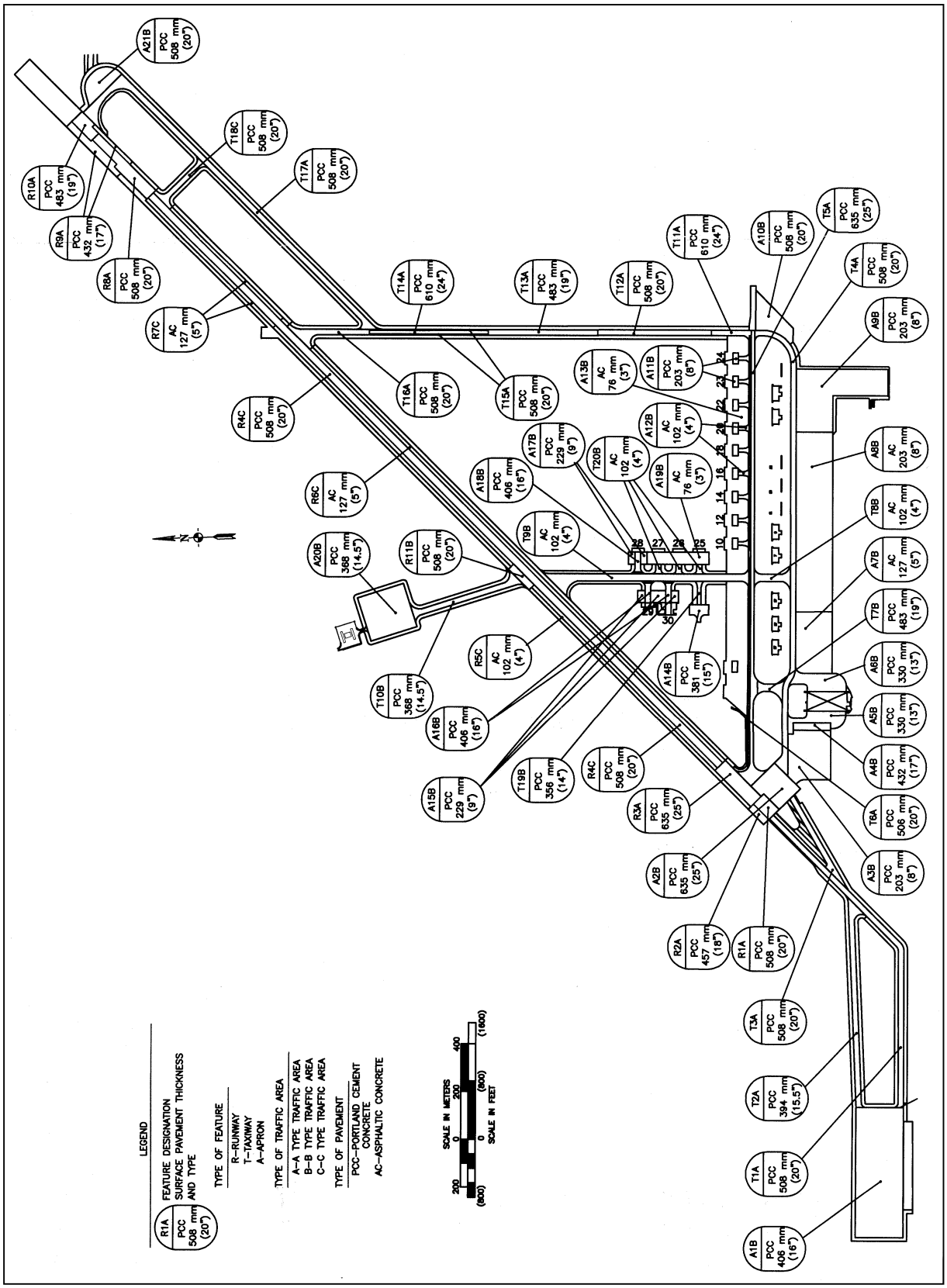

Figure A2. Pavement feature identification and location

Table A1
Climatological Data Summary

	J	F	M	A	M	J	J	A	S	O	N	D	ANN	YRS REC
Temperature, °C (°F)														
Highest	27 (80)	28 (83)	32 (89)	37 (98)	40 (104)	45 (113)	44 (112)	42 (108)	40 (104)	36 (96)	31 (87)	27 (80)	45 (113)	57
Mean Daily Max	14 (58)	18 (64)	21 (70)	26 (79)	31 (87)	36 (96)	35 (95)	34 (93)	31 (88)	26 (79)	19 (67)	15 (59)	26 (78)	57
Mean	7 (44)	9 (49)	13 (56)	18 (65)	23 (74)	28 (83)	28 (83)	27 (81)	24 (75)	18 (65)	11 (52)	7 (45)	18 (64)	57
Mean Daily Min	1 (34)	3 (38)	7 (45)	11 (52)	16 (61)	21 (70)	22 (72)	22 (71)	18 (64)	12 (53)	6 (42)	2 (35)	2 (35)	57
Lowest	-22 (-8)	-13 (8)	-10 (14)	-5 (23)	-1 (31)	8 (47)	14 (57)	13 (56)	6 (42)	-4 (25)	-17 (1)	-15 (5)	-22 (-8)	57
Precipitation, mm (in.)														
Mean	10 (0.4)	10 (0.4)	8 (0.3)	8 (0.3)	10 (0.4)	18 (0.7)	41 (1.6)	41 (1.6)	33 (1.3)	20 (0.8)	10 (0.4)	15 (0.6)	221 (8.7)	57
Snowfall, mm (in.)														
Mean	51 (2.0)	25 (1.0)	25 (1.0)	#	#	0	0	0	0	#	25 (1.0)	51 (2.0)	127 (5.0)	57
Relative Humidity, %														
Mean 0600 LST 1500 LST	67 34	58 28	49 21	43 18	42 17	44 17	62 28	68 30	67 30	64 29	62 29	65 35	58 26	58

Source of data: www.afccc.af.mil/climo El Paso International Airport, Texas.
# Denotes less than 1 mm (0.05 in.).

Table A2
Construction History

Pavement Facility (Feature)	Surface Pavement		Construction Date	Agency
	Thickness, mm (in.)	Type		
Runway 3-21				
R6C	203 (8.0)[2]	AC	1942-1945	CE
R6C	51 (2.0)[3]	AC	1953-1954	CE
R5C	305 (12.0)[2]	AC	1955-1956	CE
R7C	381 (15.0)[2]	AC	1955-1956	CE
R8A	406 (16.0)	PCC	1956-1957	CE
R9A	432 (17.0)	PCC	1956-1957	CE
R10A	483 (19.0)	PCC	1956-1957	CE
R1A	508 (20.0)	PCC	1957-1958	IE
R2A	457 (18.0)	PCC	1957-1958	IE
R3A	635 (25.0)	PCC	1958-1959	CE
R4C	508 (20.0)[4]	PCC	1958-1959	CE
R5C, R6C, R7C	Varies [3]	AC	1958-1959	CE
R8A	508 (20.0)[4]	PCC	1996-2000	CE
R11B	508 (20.0)[4]	PCC	2002	CE
Taxiway H				
T1A	508 (20.0)	PCC	2000	CE
Taxiway J				
T2A	394 (15.5)	PCC	2002	CE
Taxiway I				
T3A	508 (20.0)	PCC	2000	CE
Taxiway A				
T4A	610-635-610 (24-25-24)	PCC	1958-1959	CE
Taxiway B				
T5A	635 (25.0)	PCC	1958-1959	CE
T6A	508 (20.0)	PCC	2000	CE
Taxiway G				
T7B	483 (19.0)	PCC	1956-1957	CE
Taxiway F				
T8B, T9B	356 (14.0)[2]	AC	1953-1954	CE
Taxiway K				
T10B	368 (14.5)	PCC	2002	CE
Taxiway C				
T16A	227 (9.0)[2]	AC	1942	CE
T16A	152 (6.0)[3]	AC	1953-1954	CE
T11A	584-610-584 (23-24-23)	PCC	1958-1959	CE
T12A	227 (9.0)	PCC	1958-1959	CE
T13A	483 (19.0)	PCC	1958-1959	CE
T14A	610 (24.0)	PCC	1958-1958	CE
T13A, T15A,T16A	508 (20.0)[4]	PCC	2000	CE
Taxiway D				
T17A	227 (14.0)[2]	AC	1953-1954	CE
T17A	432-483-432 (17-19-17)	PCC	1956-1957	CE
T17A	508 (20.0)[4]	PCC	2000	CE

(Continued)

[1] CE = U.S. Army Corps of Engineers; IE = installation engineer; USAF= U.S. Air Force.
[2] Thickness includes AC, base, and subbase.
[3] Overlay pavement.
[4] Reconstructed.

Table A2 (Concluded)

Pavement Facility (Feature)	Surface Pavement Thickness, Mm (in.)	Surface Pavement Type	Construction Date	Agency
Taxiway E				
T18C	254 (10.0)[2]	AC	1953-1954	CE
T18C	508 (20.0)[4]	PCC	2000	CE
North Apron Washrack Taxiway				
T19B	356 (14.0)	PCC	1963	USAF
North Apron Hardstand Taxiways 25, 26, and 27				
T20B	356 (14.0)[2]	AC	1953-1954	CE
DAACG Ramp				
A1B	406 (14.0)	PCC	2002	CE
Southwest Warm-up Pad				
A2B	635 (25.0)	PCC	1958-1959	CE
West Apron Extension				
A3B	203 (8.0)	PCC	1943-1944	CE
Hangar Aprons				
A4B	227 (9.0)[4]	PCC	1954	CE
A5B, A6B	406-337-456 (16-13-16)	PCC	1954	CE
Operational Apron				
A7B, A8B	203 (8.0)[2]	AC	1942	CE
A7B, A8B	25 (1.0)[3]	AC	1942-1952	IE
A8B	76 (3.0)[3]	AC	1959	IE
A7B, A8B	51 (2.0)[3]	AC	1980-1983	IE
Heavy Ramp				
A9B	305-203-305 (12-8-12)	PCC	1943-1944	CE
TD4 Apron				
A10B	508 (20.0)	PCC	2000	CE
Hardstands 10-24				
A11B	406 (16.0)	PCC	1956-1957	CE
A12B	356 (14.0)[2]	AC	1953-1954	CE
East Parking Apron				
A13B	227 (9.0)[2]	AC	1953-1954	CE
North Apron Washrack				
A14B	483-381-483 (19-15-19)	PCC	1954	CE
North Parking Apron				
A15B, A17B	279-227-279 (11-9-11)	PCC	1956-1957	CE
A16B, A18B	508-406-508 (20-16-20)	PCC	1956-1957	CE
A19B	227 (9.0)[2]	AC	1953-1954	CE
Hot Cargo Ramp				
A20B	368 (14.5)	PCC	2002	CE
Northeast Warm-up Pad				
A21B	432 (17.0)	PCC	1956-1957	CE
	508 (20.0)[4]	PCC	2000	CE

[1] CE = U.S. Army Corps of Engineers; IE = installation engineer; USAF = U.S. Air Force.
[2] Thickness includes AC, base, and subbase.
[3] Overlay pavement.
[4] Reconstructed.

Table A3
Summary of Physical Property Data

Facility					Overlay Pavement			Pavement			Base			Subbase			Subgrade	
Feature	Identification	Length m (ft)	Width m (ft)	General Condition PCI	Thickness[1] mm (in.)	Description	Flex. Str.[1] MPa (psi)	Thickness[1] mm (in.)	Description	Flex. Str.[1] MPa (psi)	Thickness[1] Mm (in.)	Description	Modulus[2] MPa (psi)	Thickness[1] mm (in.)	Description	Modulus[2] MPa (psi)	Description	Modulus[2] MPa (psi)
R1A	Runway 3-21	91 (300)	61 (200)	Excellent				508 (20.0)	PCC	4.8 (700)							Silty sand (SM)	236 (34,257)
R2A	Runway 3-21	91 (300)	30 (100)	Poor				457 (18.0)	PCC	4.8 (700)							Silty sand (SM) and Clayey sand (SC)	--[4]
R3A	Runway 3-21	213 (700)	61 (200)	Very good				635 (25.0)	PCC	5.5 (800)							Silty sand (SM) and Clayey sand (SC)	193 (28,013)
R4C	Runway 3-21 Center 150 ft	3375 (11,072)	30 (100)	Excellent				508 (20.0)	PCC	4.8 (700)							SM, SC, and SM-SC[3]	152 (22,039)
R5C	Runway 3-21 (North 25' edge)	2617 (8,586)	8 (25)	Good	Varies	AC		102 (4.0)	AC		203 (8.0)	Sandy Gravel (GW-GM)	--[4]				Silty sand (SM) and Clayey sand (SC)	--[4]
R6C	Runway 3-21 (South 25' edge)	2617 (8,196)	8 (25)	Good	Varies	AC		127 (5.0)	AC		152 (6.0)	Soil cement	--[4]				Silty sand (SM) and Clayey sand (SC)	--[4]
R7C	Runway 3-21 (25' edges)	759 (2,489)	15 (50)	Excellent	Varies	AC		102 (4.0)	AC		203 (8.0)	Sandy Gravel (GW-GM)	--[4]				Silty sand (SM) and Clayey sand (SC)	--[4]
R8A	Runway 3-21	328 (1,075)	53 (175)	Excellent				508 (20.0)	PCC	4.8 (700)	152 (6.0)	Aggregate Base Course	1551 (225,000)				Clayey sand (SC)	160 (23,208)
R9A	Runway 3-21	297 (975)	46 (150)	Fair				432 (17.0)	PCC	5.5 (800)							Clayey sand (SC) and sand (SP)	--[4]
R10A	Runway 3-21	114 (375)	69 (225)	Excellent				483 (19.0)	PCC	5.5 (800)							Sand (SP) and Clayey sand (SC)	104 (15,074)
R11B	Runway 3-21 (Tw K Access)	122 (400)	30 (100)	Excellent				508 (20.0)	PCC	4.8 (700)	152 (6.0)	Aggregate Base Course	--[4]				Silty sand (SM) and Clayey sand (SC)	--[4]

(Sheet 1 of 5)

[1] Values from original construction data and/or measurements recorded in previous investigations.
[2] Modulus values used for the structural analysis of the pavement features.
[3] SM =silty sand; SC=clayey sand; and SC-SM= silty sandy clay.
[4] Structural analysis was not performed on runway edges.

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Table A3 (Continued)

Facility					Overlay Pavement			Pavement			Base			Subbase			Subgrade	
Feature	Identification	Length m (ft)	Width m (ft)	General Condition PCI	Thickness[1] mm (in.)	Description	Flex. Str.[1] MPa (psi)	Thickness[1] mm (in.)	Description	Flex. Str.[1] MPa (psi)	Thickness[1] Mm (in.)	Description	Modulus[2] MPa (psi)	Thickness[1] mm (in.)	Description	Modulus[2] MPa (psi)	Description	Modulus[2] MPa (psi)
T1A	Taxiway H	1447 (4,747)	23 (75)	Excellent				508 (20.0)	PCC	4.8 (700)	152 (6.0)	Aggregate Base Course	147 (21,319)				Sand (SP) and Silty sand (SM)	147 (21,319)
T2A	Taxiway J	901 (2,956)	23 (75)	Excellent				394 (15.5)	PCC	4.8 (700)	152 (6.0)	Aggregate Drainage Layer	219 (31,793)				Silty sand (SM)	219 (31,793)
T3A	Taxiway I	419 (1,375)	23 (75)	Excellent				508 (20.0)	PCC	4.8 (700)	152 (6.0)	Aggregate Base Course	154 (22,372)				Sand (SP)	154 (22,372)
T4A	Taxiway A	1962 (6,438)	23 (75)	Excellent				610-635-610 (24-25-24)	PCC	5.5 (800)							Silty sand (SM) and Clayey sand (SC)	197 (28,587)
T5A	Taxiway B	1919 (6,295)	15 (50)	Excellent				635 (25.0)	PCC	5.5 (800)							Silty sand (SM) and Clayey sand (SC)	125 (18,149)
T6A	Taxiway B (25' widening)	1814 (5,950)	13 (25)	Excellent				508 (20.0)	PCC	4.8 (700)	152 (6.0)	Aggregate Base Course	--[5]				Silty sand (SM) and Clayey sand (SC)	--[5]
T7B	Taxiway G	107 (350)	30 (100)	Very good				483 (19.0)	PCC	5.5 (800)							Silty sand (SM-SC)	173 (25,056)
T8B	Taxiway F	152 (500)	30 (100)	Very poor				102 (4.0)	AC		254 (10.0)	Sandy gravel (GW-GM)	553 (80,152)				Silty sand (SM) and Clayey sand (SC)	230 (33,377)
T9B	Taxiway B	880 (2,888)	30 (100)	Fair				102 (4.0)	AC		254 (10.0)	Sandy gravel (GW-GM)	804 (116,641)				Silty sand (SM) and Clayey sand (SC)	182 (26,331)
T10B	Taxiway K	465 (1,525)	24 (80)	Excellent				368 (14.5)	PCC	4.8 (700)	152 (6.0)	Aggregate Drainage Layer	189 (27,359)				Silty sand (SM) and Clayey sand (SC)	189 (27,359)

(Sheet 2 of 5)

[1] Values from original construction data and/or measurements recorded in previous investigations.
[2] Modulus values used for the structural analysis of the pavement features.
[5] Edges not evaluated.

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Table A3 (Continued)

Facility					Overlay Pavement			Pavement			Base			Subbase			Subgrade	
Feature	Identification	Length m (ft)	Width m (ft)	General Condition PCI	Thickness[1] mm (in.)	Description	Flex. Str.[1] MPa (psi)	Thickness[1] mm (in.)	Description	Flex. Str.[1] MPa (psi)	Thickness[1] Mm (in.)	Description	Modulus[2] MPa (psi)	Thickness[1] mm (in.)	Description	Modulus[2] MPa (psi)	Description	Modulus[2] MPa (psi)
T11A	Taxiway C	168 (550)	23 (75)	Excellent				584-610-584 (23-24-23)	PCC	5.5 (800)	152 (6.0)	Sandy gravel (GW-GC)	123 (17,816)				Silty sand (SM) and Clayey silty sand (SM-SC)	123 (17,816)
T12A	Taxiway C	474 (1,556)	23 (75)	Excellent				508 (20.0)	PCC	4.8 (700)	152 (6.0)	Aggregate Base Course	163 (23,521)				Silty sand (SM) and Clayey silty sand (SM-SC)	162 (23,521)
T13A	Taxiway C	457 (1,500)	23 (75)	Excellent				483 (19.0)	PCC	5.5 (800)	152 (6.0)	Sandy gravel (GW-GC)	1551 (225,000)				Silty sand (SM) and Clayey silty sand (SM-SC)	123 (17,889)
T14A	Taxiway C	495 (1,625)	15 (50)	Excellent				610 (24.0)	PCC	5.5 (800)	152 (6.0)	Sandy gravel (GW-GC)	1551 (225,000)				Silty sand (SM) and Clayey silty sand (SM-SC)	154 (22,282)
T15A	Taxiway C 12.5' widening on each side of T14A	495 (1,625)	8 (25)	Excellent				508 (20.0)	PCC	4.8 (700)	152 (6.0)	Aggregate Base Course	--[5]				Silty sand (SM) and Clayey silty sand (SM-SC)	--[5]
T16A	Taxiway C	322 (1,056)	23 (75)	Excellent				508 (20.0)	PCC	4.8 (700)	152 (6.0)	Aggregate Base Course	166 (24,086)				Clayey Silty Sand (SM-SC)	166 (24,086)
T17A	Taxiway D	1634 (5,360)	24 (80)	Excellent				508 (20.0)	PCC	4.8 (700)	152 (6.0)	Aggregate Base Course	167 (24,260)				Silty sand (SM) and Clayey sand (SM-SC)	167 (24,260)
T18C	Taxiway E	235 (770)	24 (80)	Excellent				508 (20.0)	PCC	4.8 (700)	152 (6.0)	Aggregate Base Course	161 (23,398)				Silty sand (SM) and Clayey sand (SC)	161 (23,398)
T19B	North Apron Washrack Taxiway	91 (300)	15 (50)	Poor				356 (14.0)	PCC	5.2 (755)							Silty sand (SM)	60 (8,646)
T20B	North Apron Hardstand Taxiways 25, 26, and 27	Each 35 (115)	91 (100)	Poor				102 (4.0)	AC		254 (10.0)	Clayey Sandy Gravel	343 (49,825)				Silty sand (SM)	168 (24,365)

(Sheet 3 of 5)

[1] Values from original construction data and/or measurements recorded in previous investigations.
[2] Modulus values used for the structural analysis of the pavement features.
[5] Edges not evaluated.

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Table A3 (Continued)

Facility					Overlay Pavement			Pavement			Base			Subbase			Subgrade	
Feature	Identification	Length m (ft)	Width M (ft)	General Condition PCI	Thickness[1] mm (in.)	Description	Flex. Str.[1] MPa (psi)	Thickness[1] mm (in.)	Description	Flex. Str.[1] MPa (psi)	Thickness[1] Mm (in.)	Description	Modulus[2] MPa (psi)	Thickness[1] mm (in.)	Description	Modulus[2] MPa (psi)	Description	Modulus[2] MPa (psi)
A1B	DAACG Ramp	545 (1,789)	208 (684)	Excellent				406 (16.0)	PCC	4.8 (700)	152 (6.0)	Aggregate Drainage Layer	189 (27,357)				Sandy clay (CL)	189 (27,357)
A2B	Southwest Warm-up Apron	130 (425)	152 (500)	Excellent				635 (25.0)	PCC	5.5 (800)							Clayey silty sand (SM-SC)	177 (25,728)
A3B	West Apron Extension	207 (680)	180 (590)	Failed				305-203-305 (12-8-12)	PCC	4.9 (715)							Silty sand (SM)	132 (19,165)
A4B	Hangar Apron	154 (506)	30 (100)	Failed				229 (9.0)	PCC	5.5 (800)							Clayey sand (SC)	158 (22,982)
A5B	Hangar Apron	244 (800)	Varies	Poor				406-357-406 (16-13-16)	PCC	5.5 (800)							Clayey sand (SC)	152 (22,114)
A6B	Hangar Apron	221 (725)	Varies	Fair				406-357-406 (16-13-16)	PCC	5.5 (800)							Clayey sand (SC)	146 (21,244)
A7B	Operational Apron	247 (810)	152 (500)	Very poor	51(2.0)	AC		76 (3.0)	AC		152 (6.0)	Soil cement	981 (142,349)				Silty sand (SM)	115 (16,652)
A8B	Operational Apron	153 (2,470)	152 (500)	Fair	51 (2.0) 76 (3.0)	AC		76 (3.0)	AC		152 (6.0)	Soil cement	819 (118,831)				Silty sand (SM)	122 (17,655)
A9B	Heavy Ramp	381 (1,250)	Varies	Very good				305-203-305 (12-8-12)	PCC	5.0 (720)							Silty sand (SM)	162 (23,468)
A10B	T4D Apron	226 (740)	73 (240)	Excellent				508 (20.0)	PCC	4.8 (700)	152 (6.0)	Aggregate Base Course	160 (23,164)				Silty sand (SM) and Clayey sand (SC)	160 (23,164)

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[1] Values from original construction data and/or measurements recorded in previous investigations.
[2] Modulus values used for the structural analysis of the pavement features.

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Table A3 (Concluded)

Facility					Overlay Pavement			Pavement			Base			Subbase			Subgrade	
Feature	Identification	Length m (ft)	Width m (ft)	General Condition PCI	Thickness[1] mm (in.)	Description	Flex. Str.[1] MPa (psi)	Thickness[1] mm (in.)	Description	Flex. Str.[1] MPa (psi)	Thickness[1] Mm (in.)	Description	Modulus[2] MPa (psi)	Thickness[1] mm (in.)	Description	Modulus[2] MPa (psi)	Description	Modulus[2] MPa (psi)
A11B	Hardstands 10-24	Each 46 (150)	Each 23 (75)	Failed				406 (16.0)	PCC	5.5 (800)							Clayey sand (SC)	142 (20,563)
A12B	Hardstands 10-24	Each 46 (150)	Each 15 (50)	Very poor				102 (4.0)	AC		152 (6.0)	Sandy gravel (GW)	562 (81,583)				Clayey sand (SC)	169 (24,453)
A13B	East Parking Apron	998 (3,275)	91 (300)	Very poor				76 (3.0)	AC		152 (6.0)	Sandy gravel (GW)	444 (64,427)				Silty sand (SM)	136 (19,746)
A14B	North Apron Washrack	81 (266)	50 (165)	Very good				483-381-483 (19-15-19)	PCC	4.7 (680)							Silty sand (SM)	123 (17,876)
A15B	North Parking Apron	125 (409)	51 (162)	Very poor				279-227-279 (11-9-11)	PCC	5.5 (800)							Clayey sand (SC)	76 (11,001)
A16B	North Parking Apron	84 (275)	46 (150)	Very poor				508-406-508 (20-16-20)	PCC	5.5 (800)							Clayey sand (SC)	130 (18,832)
A17B	North Parking Apron	55 (180)	52 (169)	Very poor				279-227-279 (11-9-11)	PCC	5.5 (800)							Silty sand (SM)	68 (9,836)
A18B	North Parking Apron	84 (275)	23 (75)	Very poor				508-406-508 (20-16-20)	PCC	5.5 (800)							Silty sand (SM)	130 (18,865)
A19B	North Parking Apron	259 (850)	51 (166)	Very poor				76 (3.0)	AC		152 (6.0)	Sandy gravel (GW)	400 (57,969)				Silty sand (SM)	132 (19,186)
A20B	Hot Cargo Ramp	201 (660)	190 (624)	Excellent				368 (14.5)	PCC	4.8 (700)	152 (6.0)	Aggregate Drainage Layer	125 (18,100)				Silty sand (SM) and Clayey sand (SC)	125 (18,100)
A21B	Northeast Warm-up Apron	177 (580)	70 (230)	Excellent				508 (20.0)	PCC	4.8 (700)	152 (6.0)	Aggregate Base Course	1551 (225,000)				Silty sand (SM) and Clayey sand (SC)	148 (21,448)

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[1] Values from original construction data and/or measurements recorded in previous investigations.
[2] Modulus values used for the structural analysis of the pavement features.

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Table A4
Traffic Data (January thru December 2001)

Aircraft	Weight kg (lb)	12-month Period Total Operations[1]	20-Year Total Operations[1]
AN-124	392 351 (864,210)	8	160
C-130	70 370 (155,000)	240	4,800
C-141	146 642 (323,000)	4,201	84,022
C-5A	349 126 (769,000)	4,201	84,022
C-17	263 320 (580,000)	4,201	84,022
B-727	94 886 (209,500)	4,201	84,022
B-747	362 292 (798,000)	4,201	84,022
B-757	116 224 (256,000)	4,201	84,022
KC-135	136 926 (301,600)	4,201	84,022
KC-10	263 320 (580,000)	4,201	84,022

[1] In analysis only takeoffs are considered an operation (pass).

Appendix B
Tests and Results

Tests Conducted

The pavements were evaluated based on the results from nondestructive testing utilizing a heavy weight deflectometer (HWD). The test procedures and results are discussed below.

Nondestructive Tests

Test equipment

Nondestructive tests (NDT) were performed on the pavements with the Dynatest model 8081 (HWD). The HWD is an impact load device that applies a single-impulse transient load of approximately 25- to 30-millisecond duration. With this trailer-mounted device, a dynamic force is applied to the pavement surface by dropping a weight onto a set of rubber cushions which results in an impulse loading on an underlying circular plate 300 mm (11.8 in.) in diameter in contact with the pavement. The applied force and the pavement deflections, respectively, are measured with load cells and velocity transducers. The drop height of the weights can be varied from 0 to 399 mm (15.7 in.) to produce a force from 0 to approximately 222 kN (50,000 lb). The system is controlled with a laptop computer that also records the output data. Velocities were measured and deflections computed at the center of the load plate (D1) and at distances of 305 (12), 610 (24), 914 (36), 1219 (48), 1524 (60), and 1828 mm (72 in.) (D2 - D7) from the center of the load plate.

Test procedure

On runways and taxiways, deflection basin measurements were made at 30-m (100-ft) intervals on alternate sides of the centerline along the main gear wheel paths. The tests were performed on 3- to 4-m (10- to 12-ft) offsets alternating left and right of the centerline. The parking aprons were tested in a grid pattern of approximately 30-m (100-ft) intervals or at locations that were

selected to ensure that adequate NDT were performed per feature for evaluation purposes. Lines along which the NDT were conducted are indicated in Figure B1. At each test location, pavement deflection measurements were recorded at force levels of approximately 67, 122, 157, or 222 kN (15,000, 25,000, 35,000, or 50,000 lb). Impulse stiffness modulus (ISM) values were then calculated based on the slope of the plot of impulse load versus deflection at the first sensor (D1), for the maximum force level.

NDT Analysis

The NDT results or ISM data for each facility were grouped according to different pavement features. Figures B2 through B26 graphically show the ISM test results. A representative basin for each feature was determined using the computerized Layered Elastic Evaluation Program (LEEP). Table B1 shows the representative basins for each feature as determined from the NDT.

Representative basins were used to determine section modulus values of the various layers within the pavement structure in each feature. Deflection basins were input to a multi-layered, linear elastic backcalculation program to determine the surface, base, and subgrade modulus values. The program determines a set of modulus values that provide the best fit between a measured (NDT) deflection basin and a computed (theoretical) deflection basin. Table B2 presents a summary of the backcalculated modulus values based on the representative basins for each pavement section.

Modulus values for AC surface layers can be determined using three methods: (a) use the surface temperature at the time of testing and the previous 5-day mean air temperature, (b) backcalculate the modulus values using the FWD deflection basins, or (c) determine the design modulus from past temperature data. All three methods of determining the AC modulus values are described in UFC 3-260-03 (Headquarters, Departments of the Army, the Air Force, and the Navy April 2001a). All pavements have been evaluated for a design life of 20 years. The modulus of an AC layer is temperature dependent; therefore, seasonal variation is considered by using a design modulus based on historical temperature data. From the climatological table (Table A1), an average annual maximum temperature of 31ºC (78ºF) and an average yearly mean of 24ºC (64ºF) were used in determining the design AC modulus. For a loading frequency of 2 Hz for taxiways and aprons, the design AC modulus is 1379 MPa (200,000 psi). The design AC modulus along with the backcalculated values for the base and subgrade layers were used to determine the structural capacity of the AC pavement features.

Modulus values for PCC pavements can be backcalculated using the FWD deflection basins or a design modulus for the PCC can be used. In the evaluation of a rigid pavement, the design modulus should be used for the PCC layer along with the backcalculated values for the subgrade layers. The backcalculated PCC modulus values shown in Table B2 are within the default range of 17 237 to 68 900 MPa (2,500,000 to 10,000,000 psi) recommended in UFC 3-260-03

(Headquarters, Departments of the Army, Navy, and the Air Force, and the Navy 2001a). This manual also recommends a modulus of 34 474 MPa (5,000,000 psi) for a PCC layer in good condition.

The ability of the joints in the PCC slabs to transfer load is measured with the HWD device. The ratio of deflections measured on each side of the joint (deflection of unloaded side/deflection of loaded side) is related to joint efficiency or load transfer. Joint tests were conducted at select locations on the PCC pavements. Table B3 shows the summaries of joint ratio test on select PCC pavements.

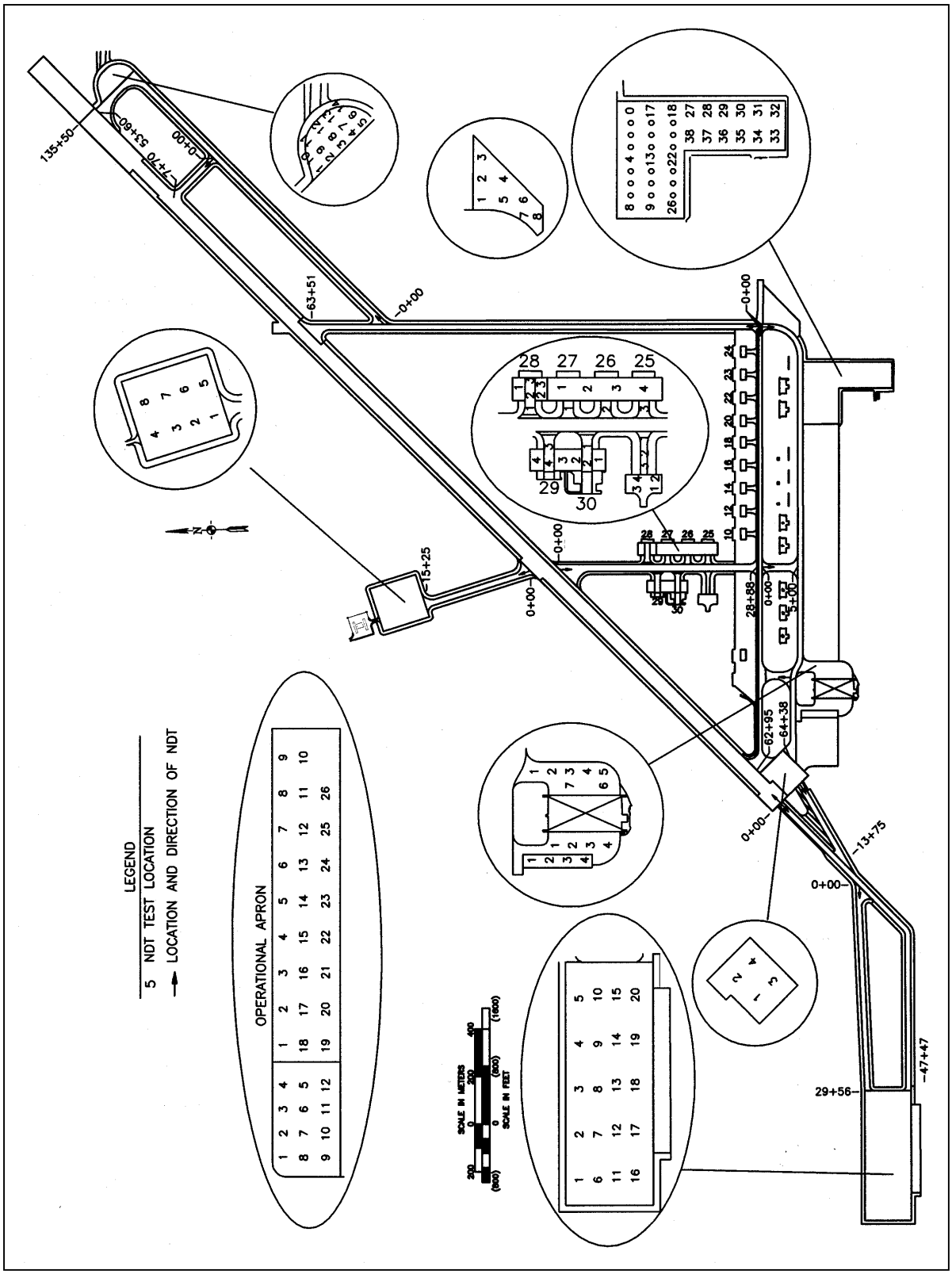


Figure B1. NDT test locations/direction

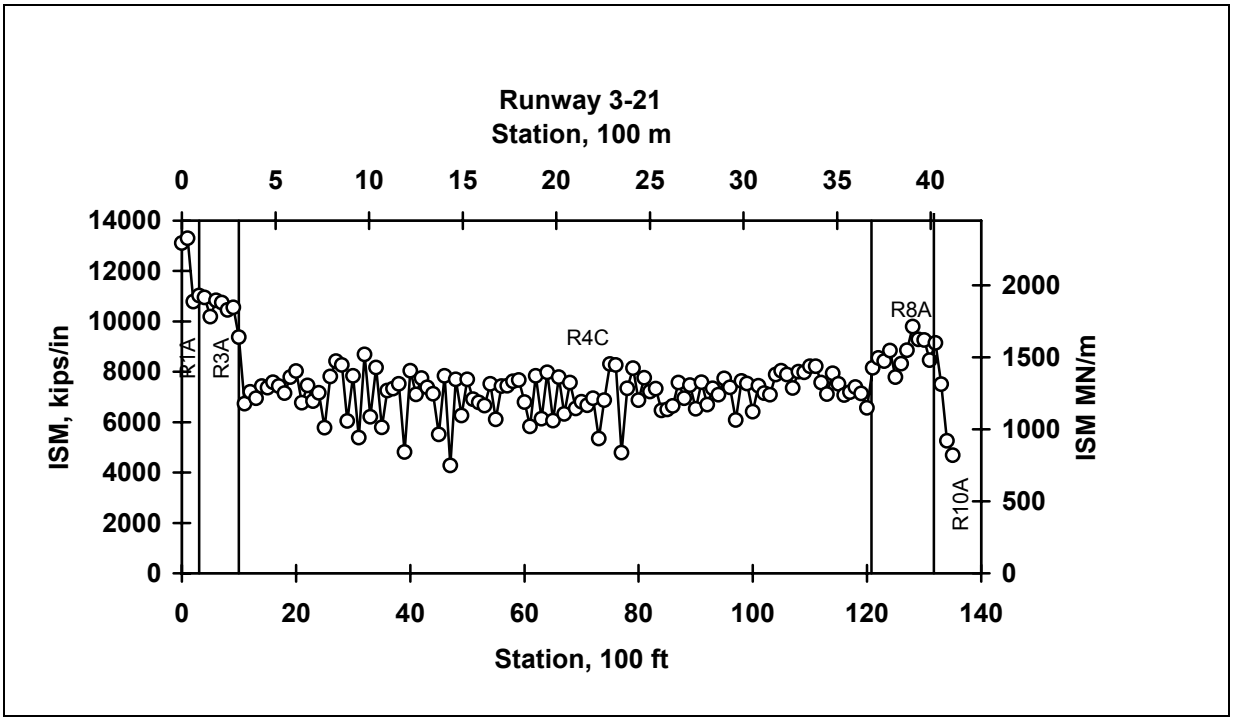


Figure B2. ISM profile, Runway 3-21, Features R1A thru R10A

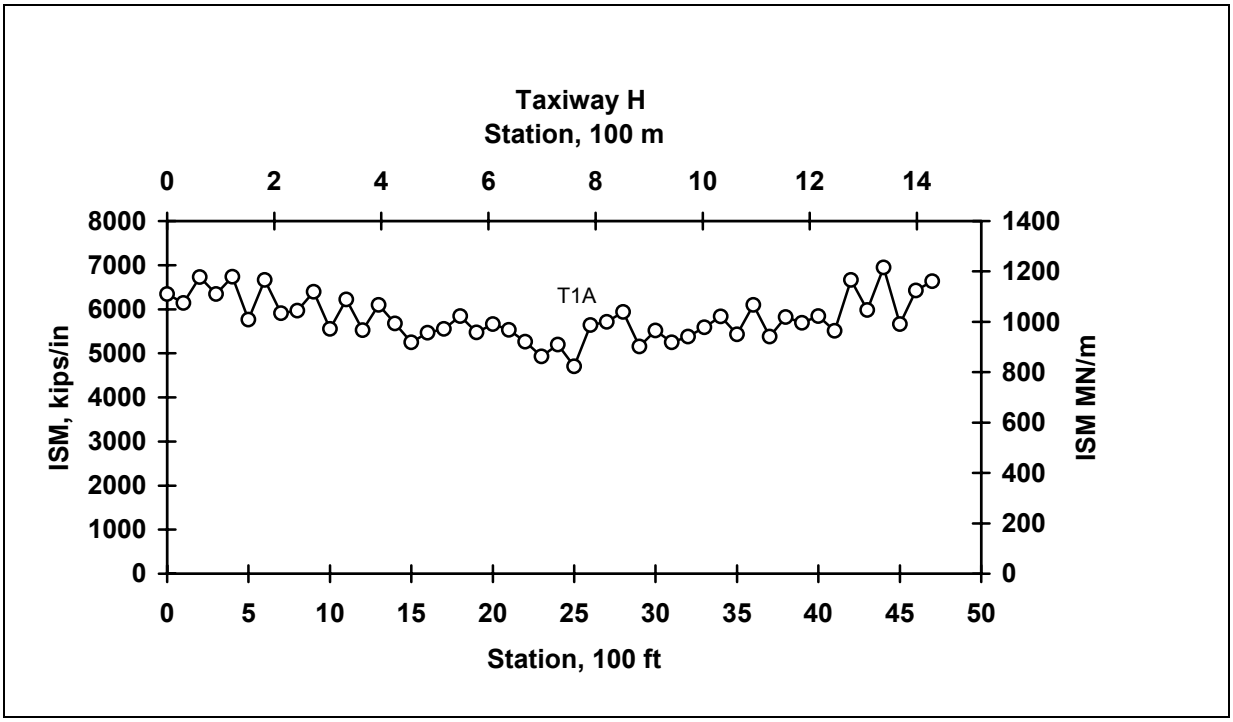


Figure B3. ISM profile, Taxiway H, Feature T1A

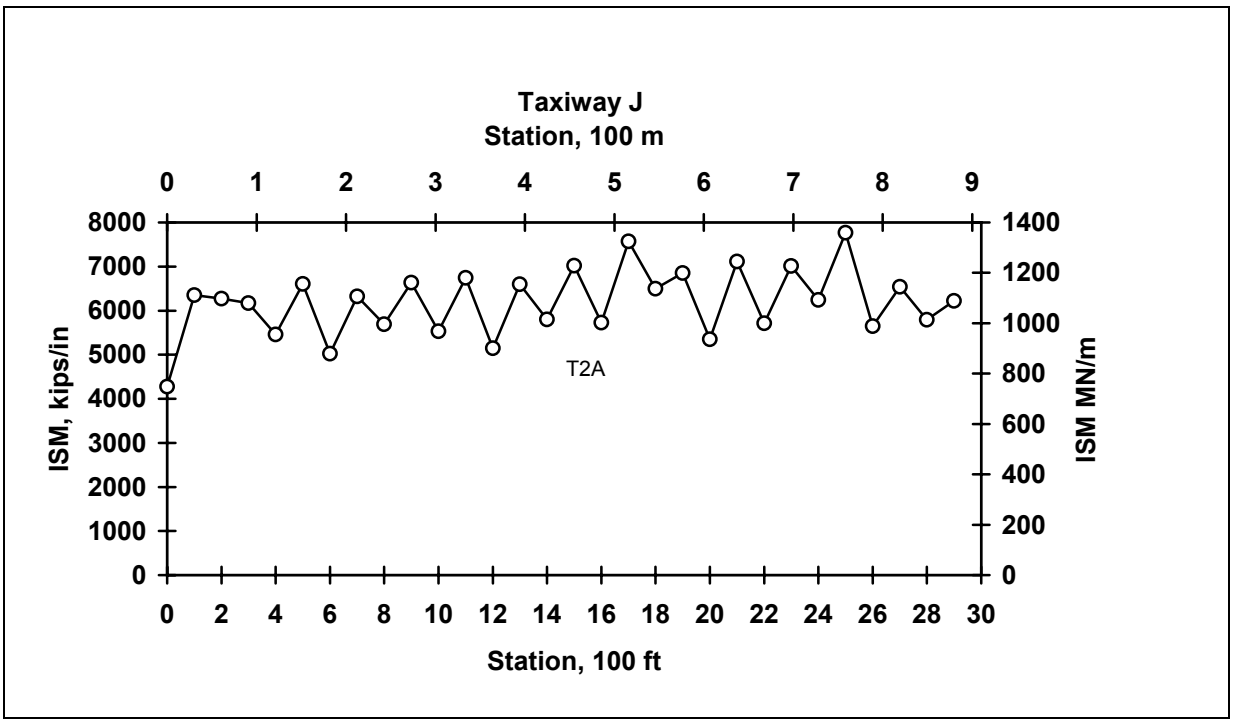


Figure B4. ISM profile, Taxiway J, Feature T2A

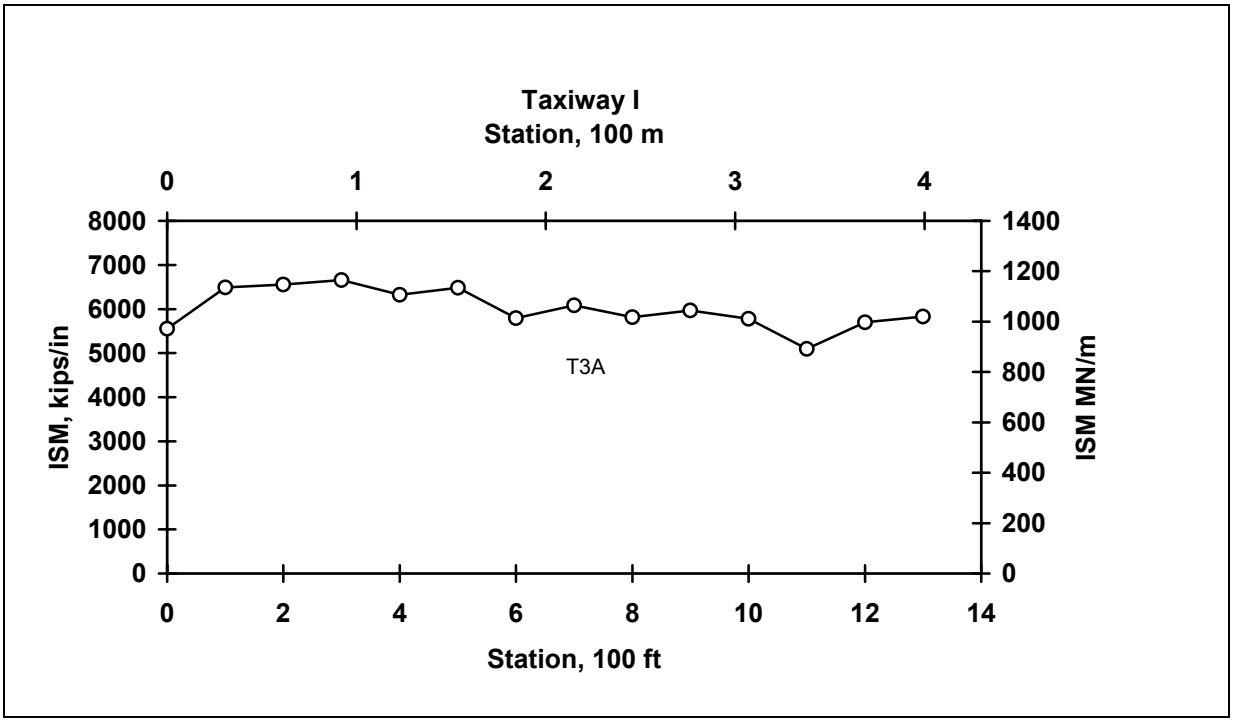


Figure B5. ISM profile, Taxiway I, Feature T3A

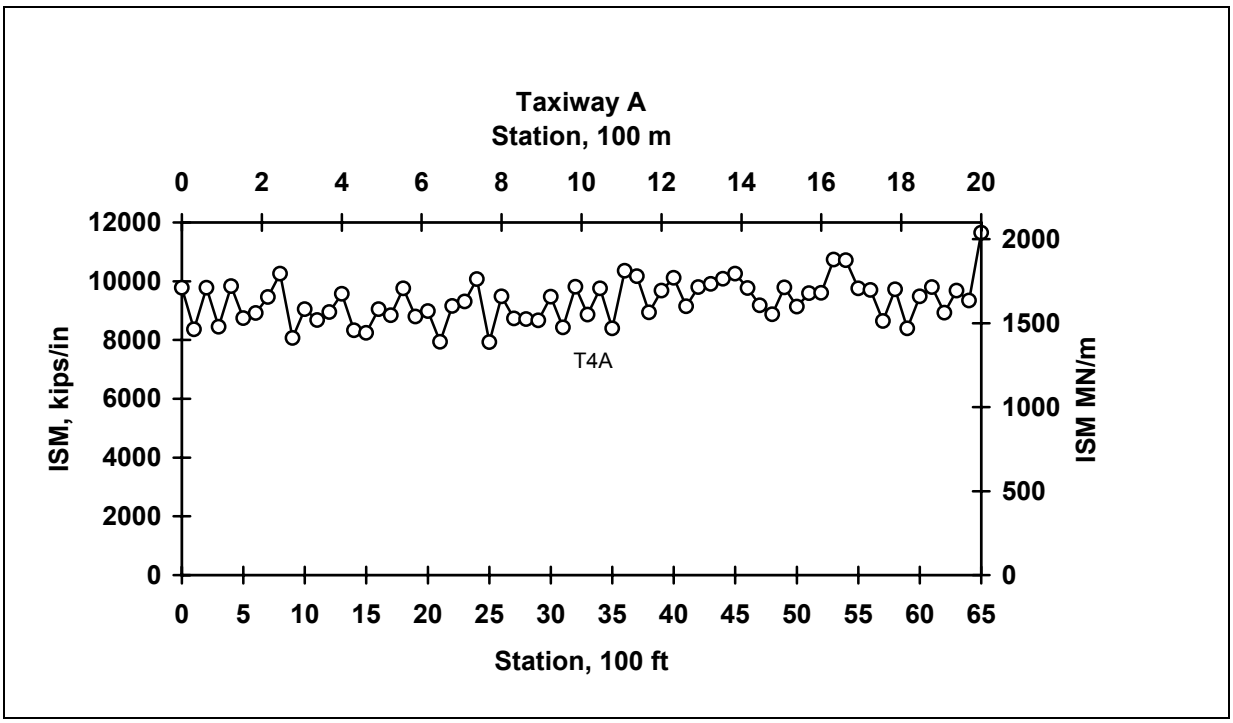


Figure B6. ISM profile, Taxiway A, Feature T4A

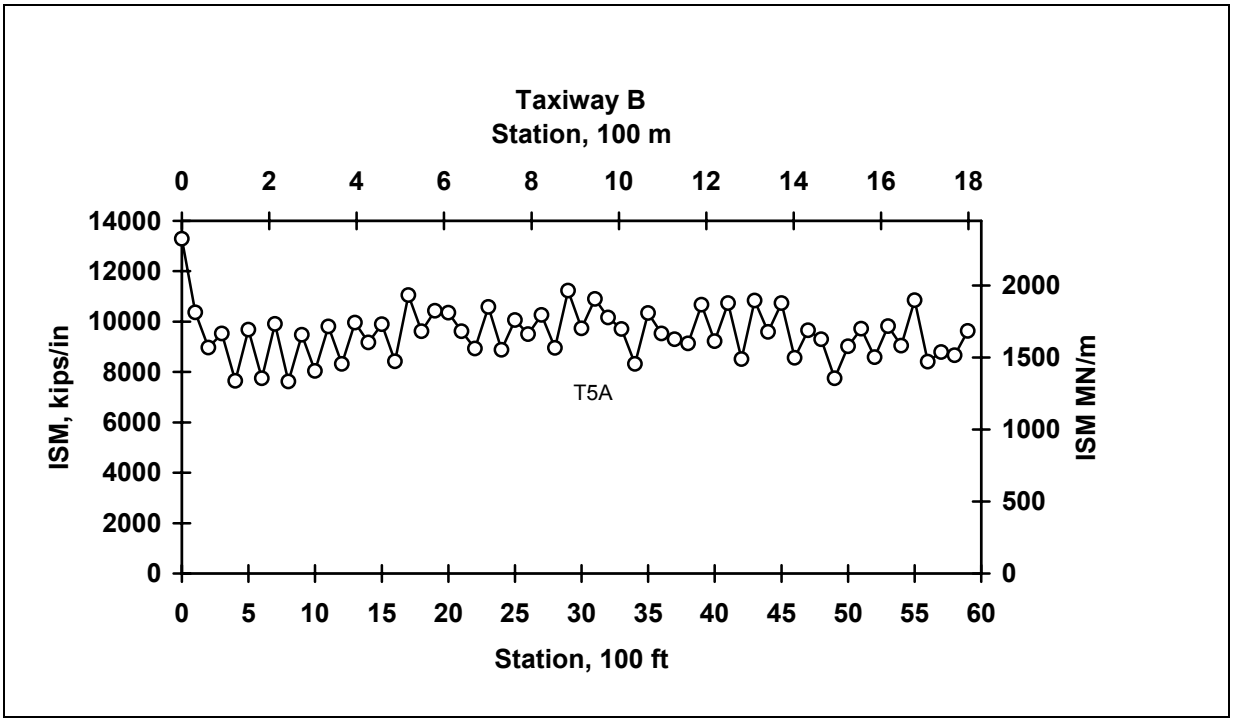


Figure B7. ISM profile, Taxiway B, FeatureT5A

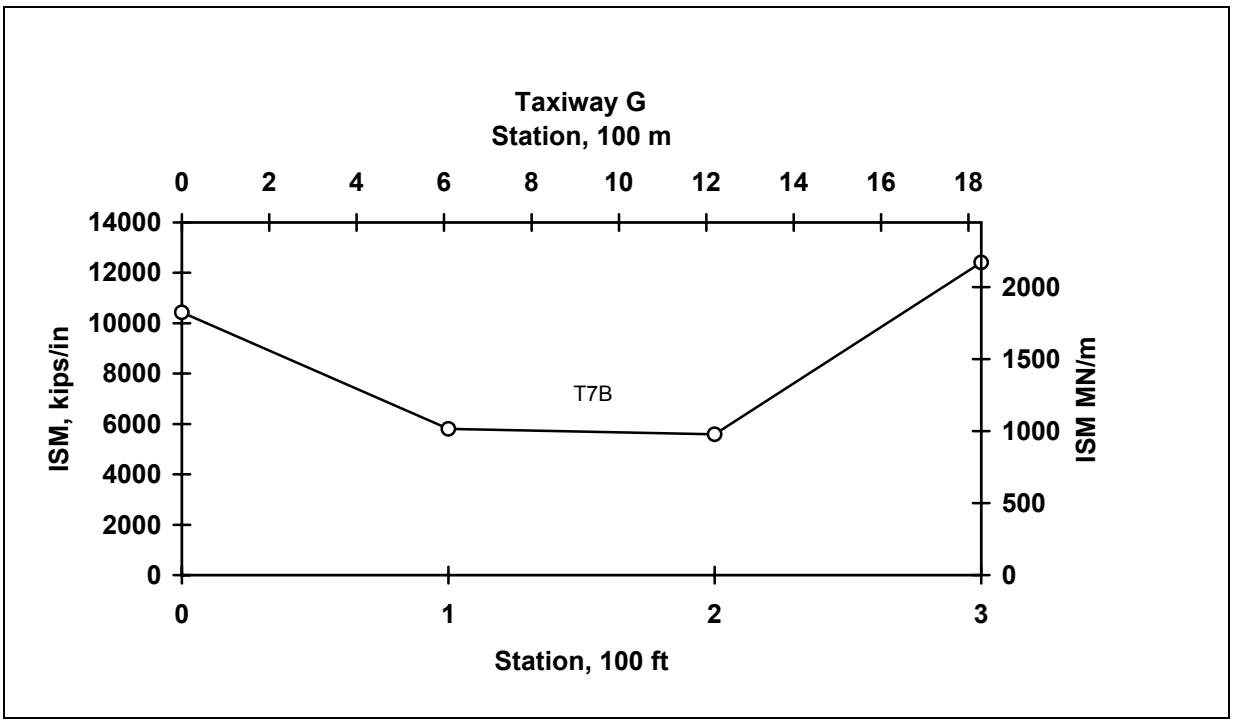


Figure B8. ISM profile, Taxiway G, Features T7C

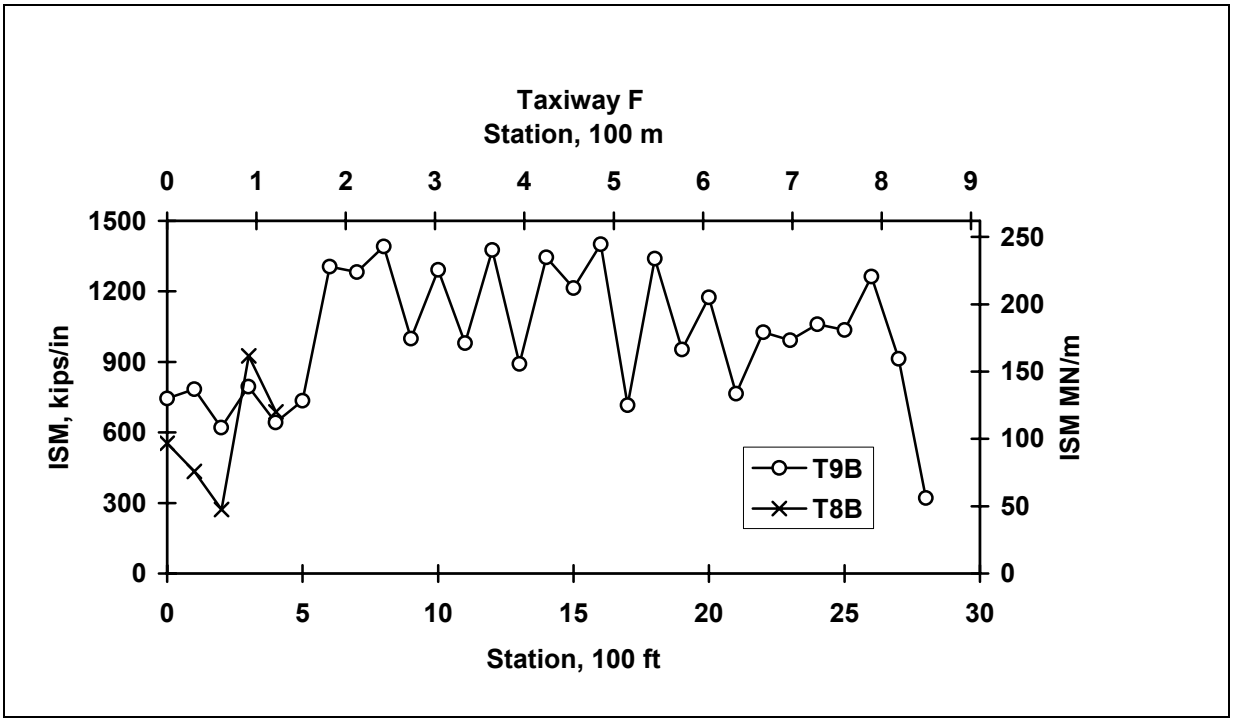


Figure B9. ISM profile, Taxiway F, Features T8B and T9B

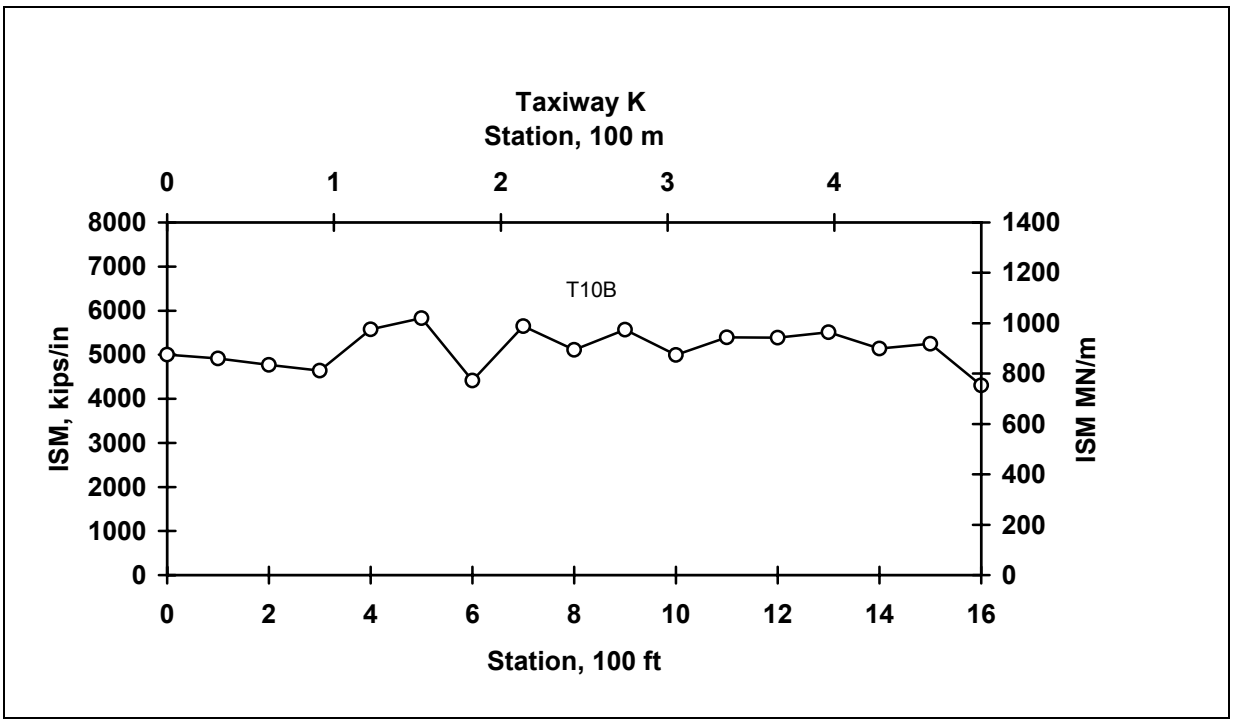


Figure B10. ISM profile, Taxiway K, Feature T10B

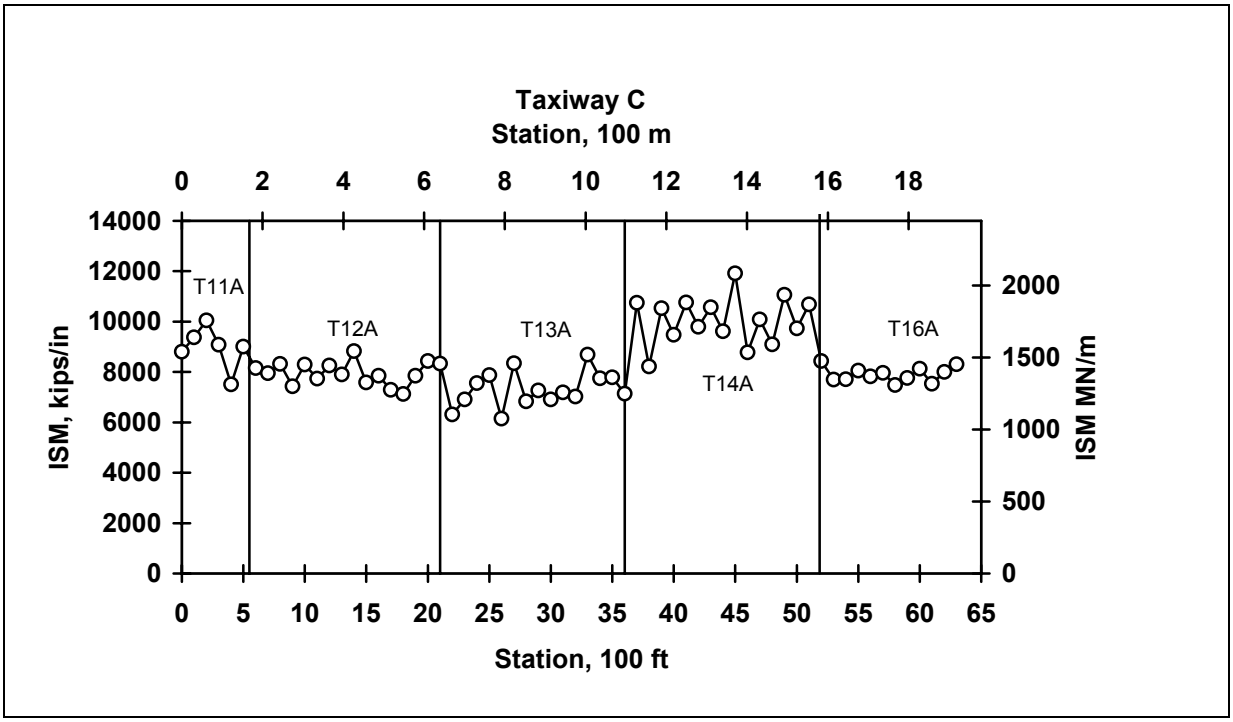


Figure B11. ISM profile, Taxiway C, Features T11A thru T16A

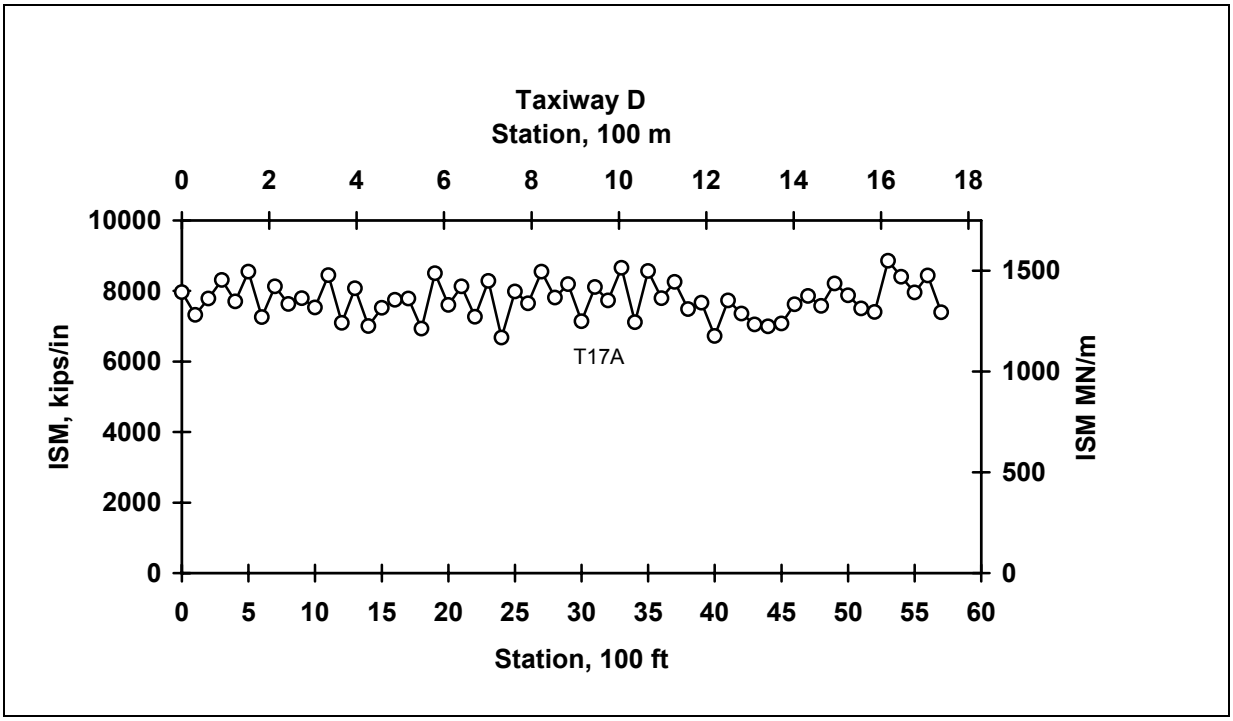


Figure B12. ISM profile, Taxiway D, Feature T17A

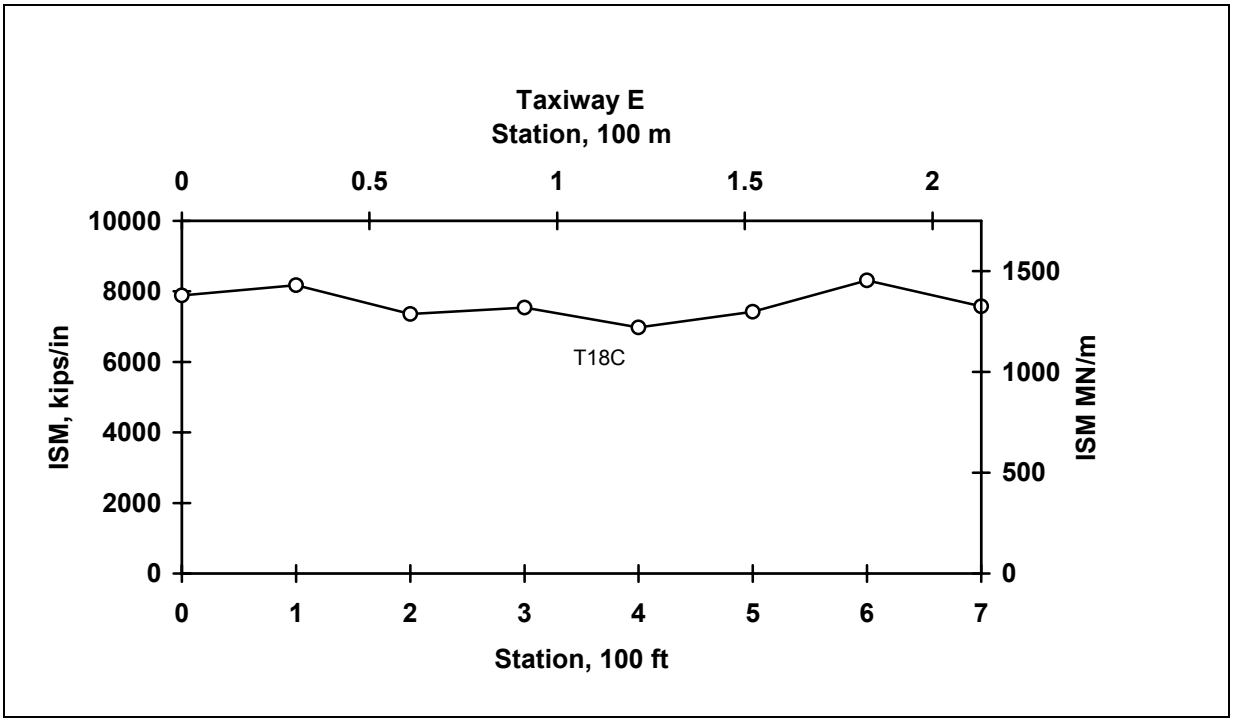


Figure B13. ISM profile, Taxiway E, Feature T18C

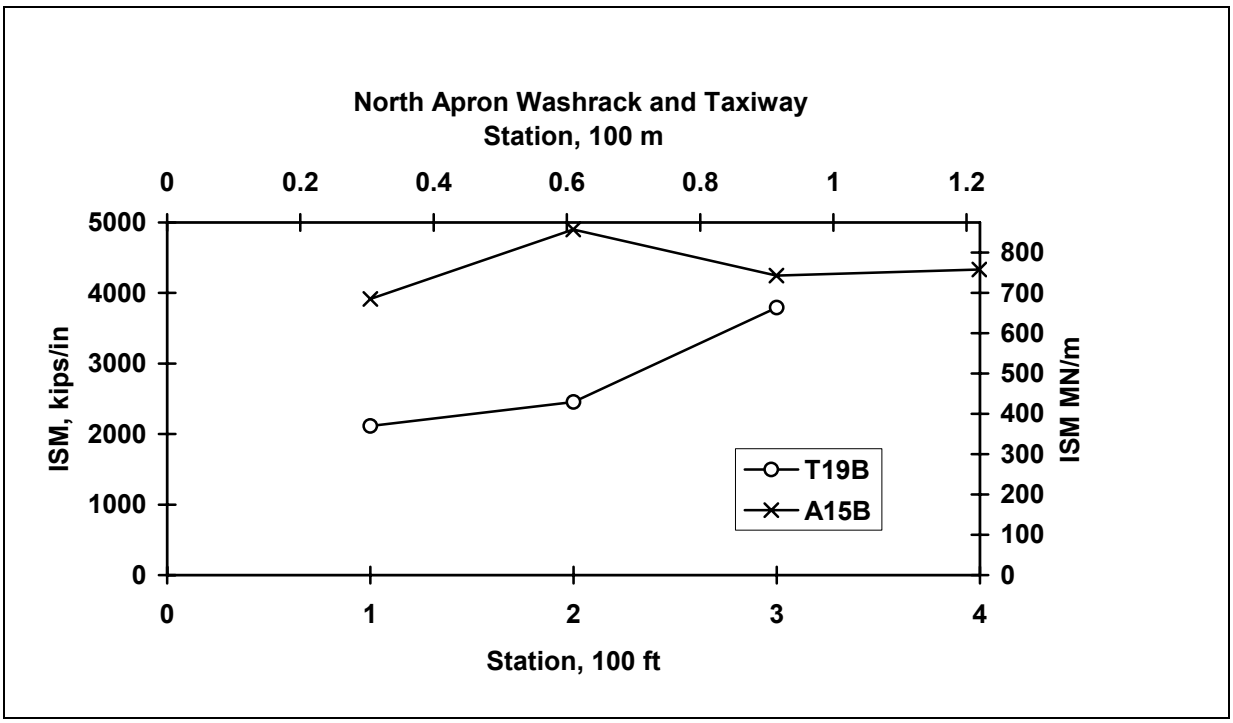


Figure B14. ISM profile, North Apron Washrack and Taxiway, Features A15B and T14B

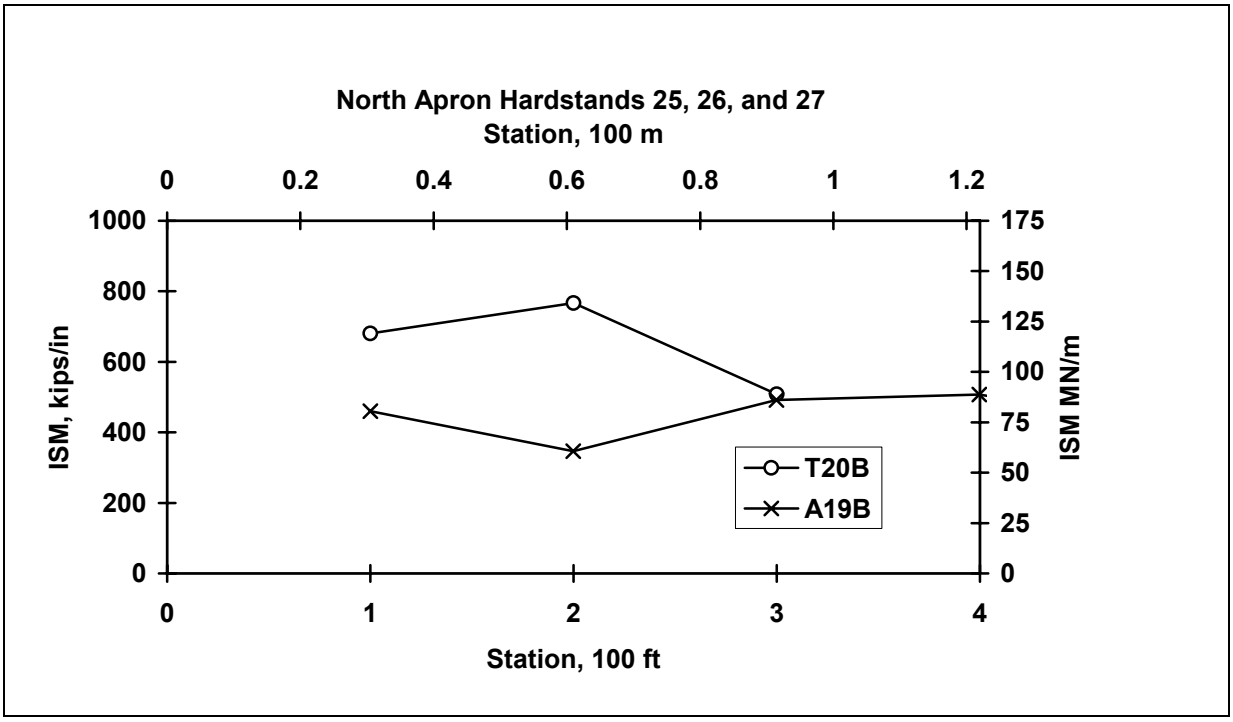


Figure B15. ISM profile, North Apron Hardstands 25, 26, and 26, Features T20B and A19B

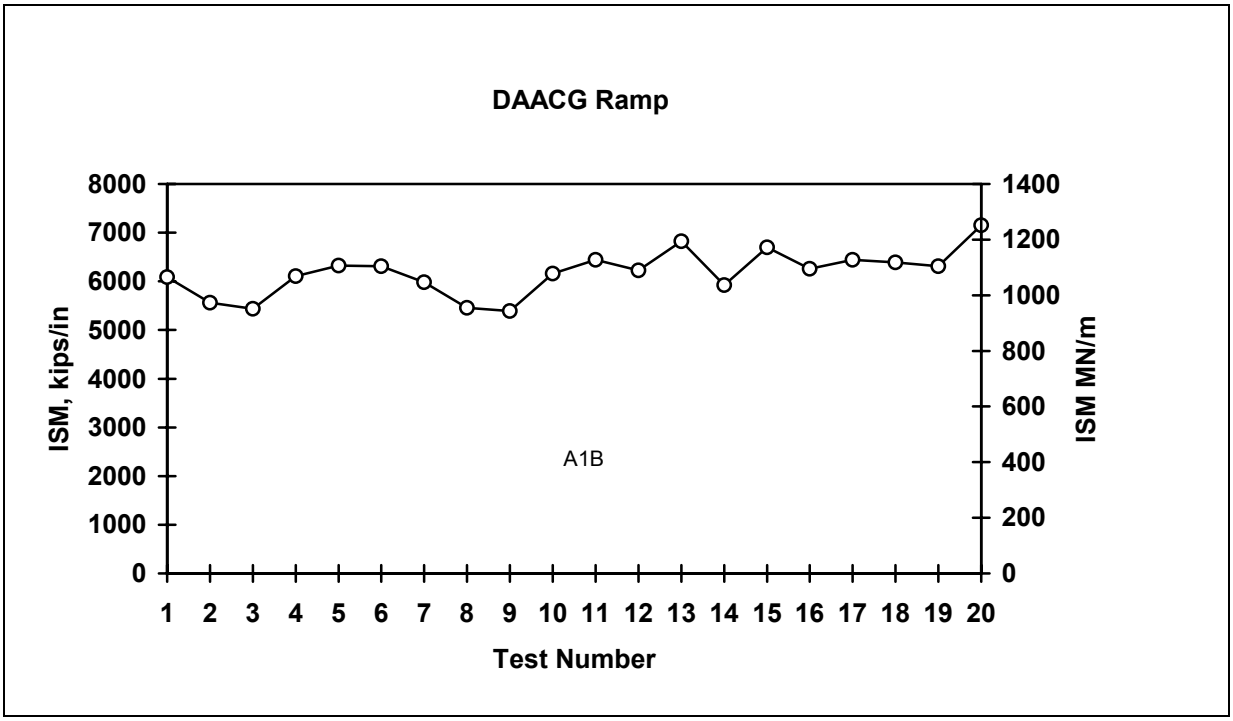


Figure B16. ISM profile, DAACG Ramp, Feature A1B

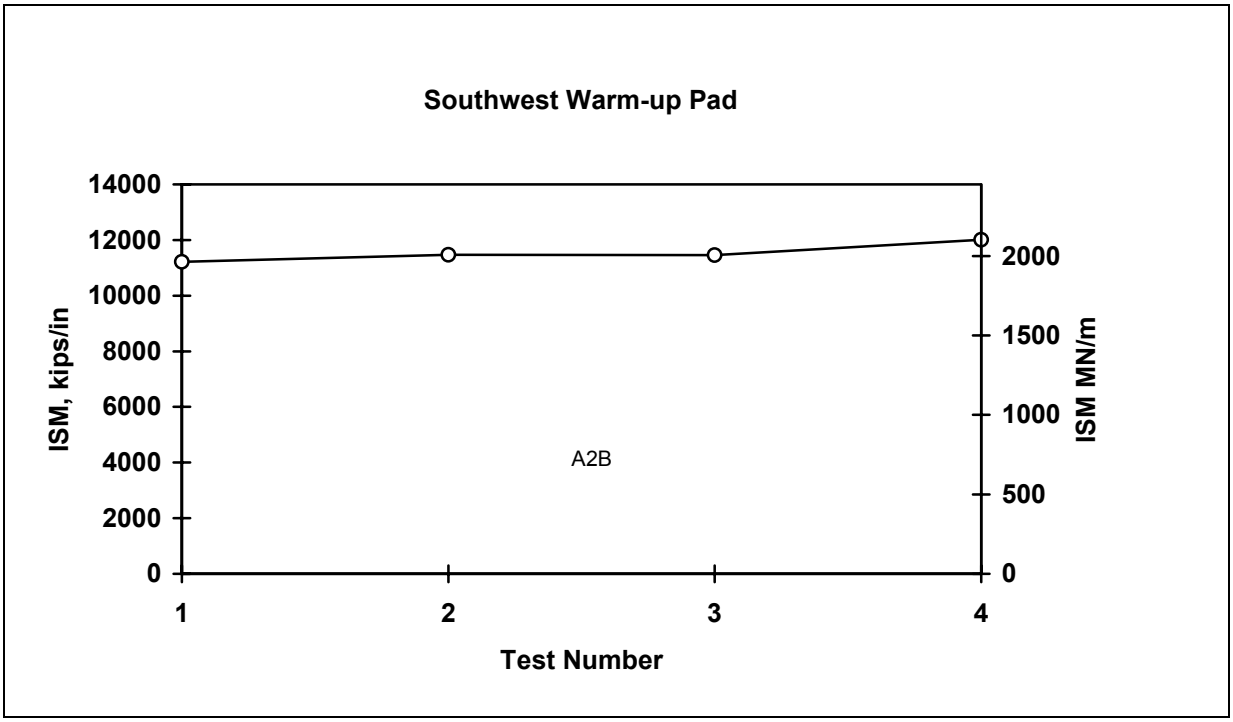


Figure B17. ISM profile, Southwest Warm-up Pad, Feature A2B

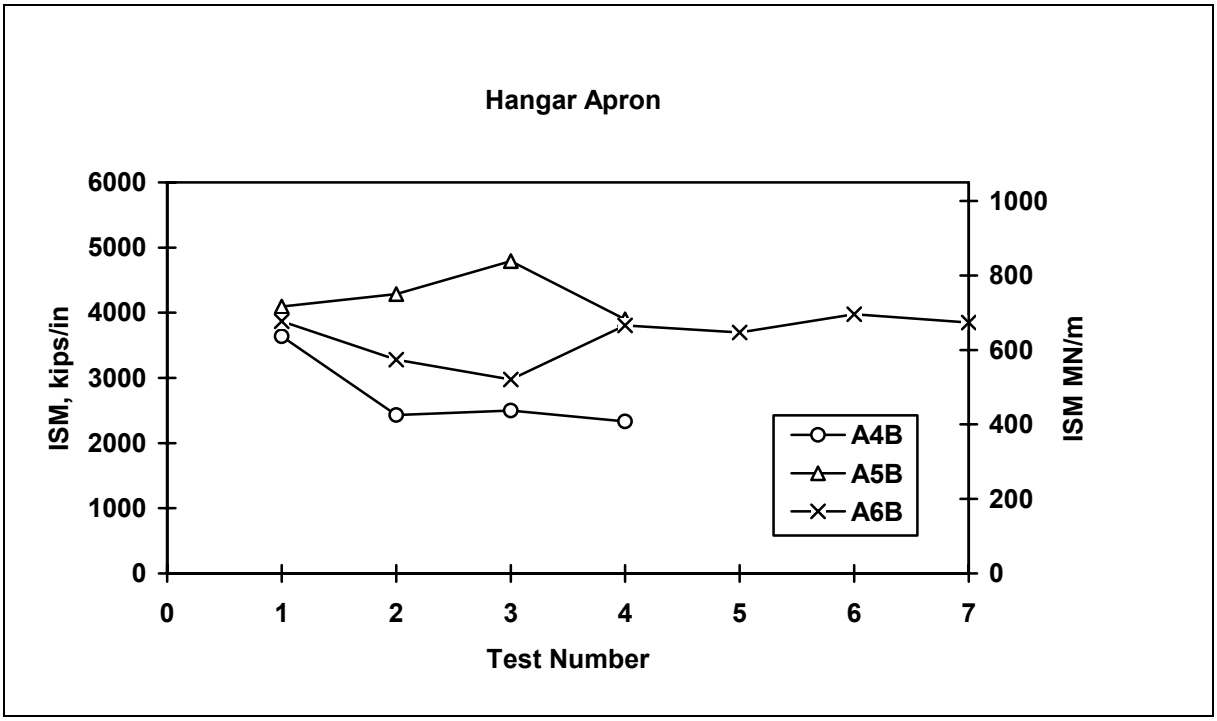


Figure B18. ISM profile, Hangar Apron, Features A4B, A5B and A6B

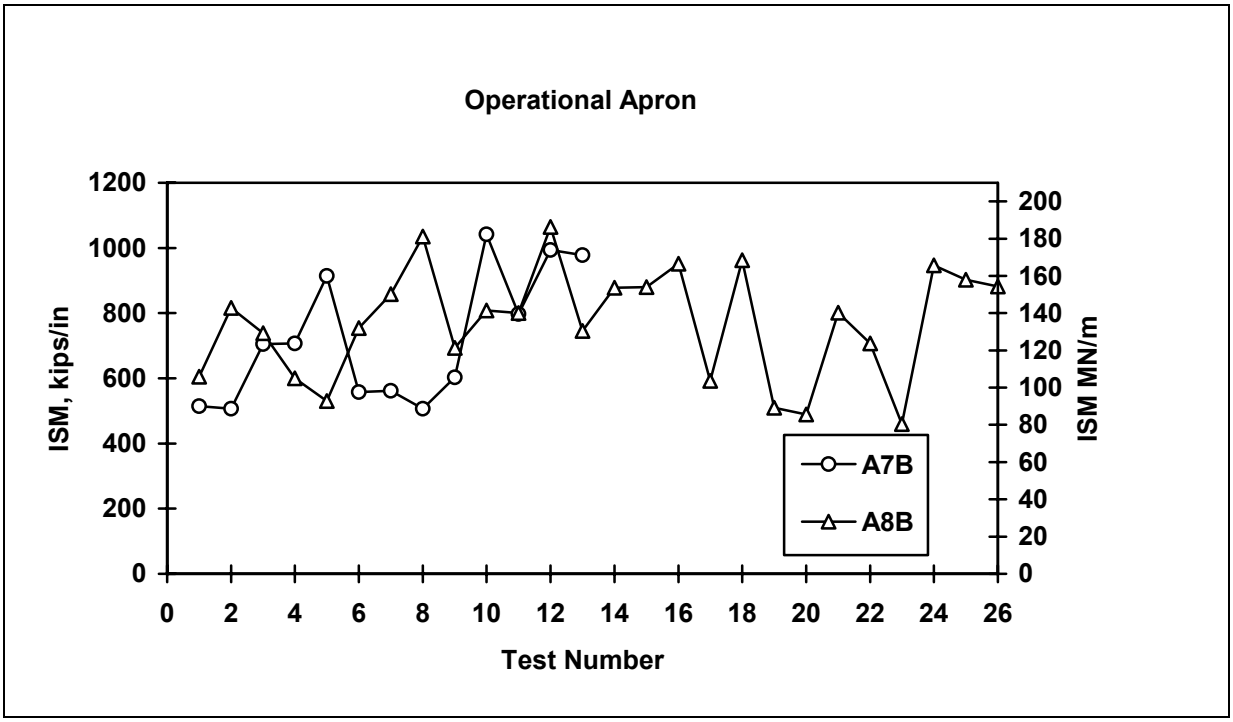


Figure B19. ISM profile, Operational Apron, Features A7B and A8B

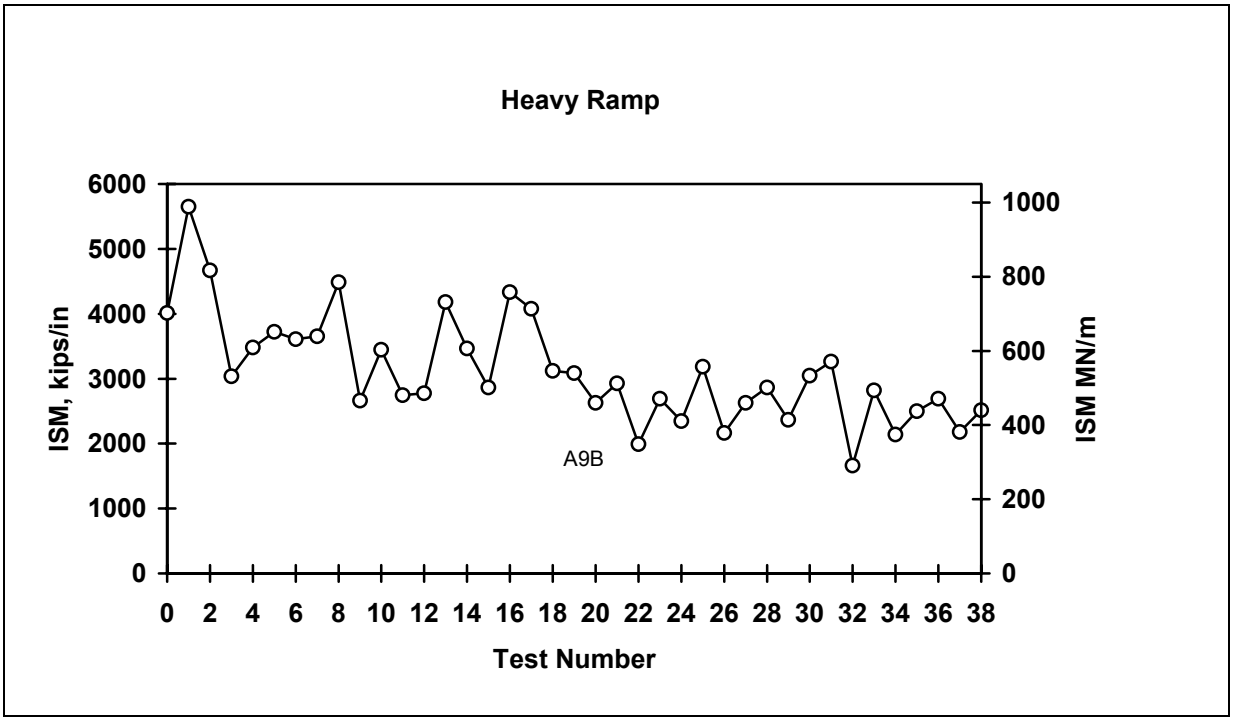


Figure B20. ISM profile, Heavy Ramp, Feature A9B

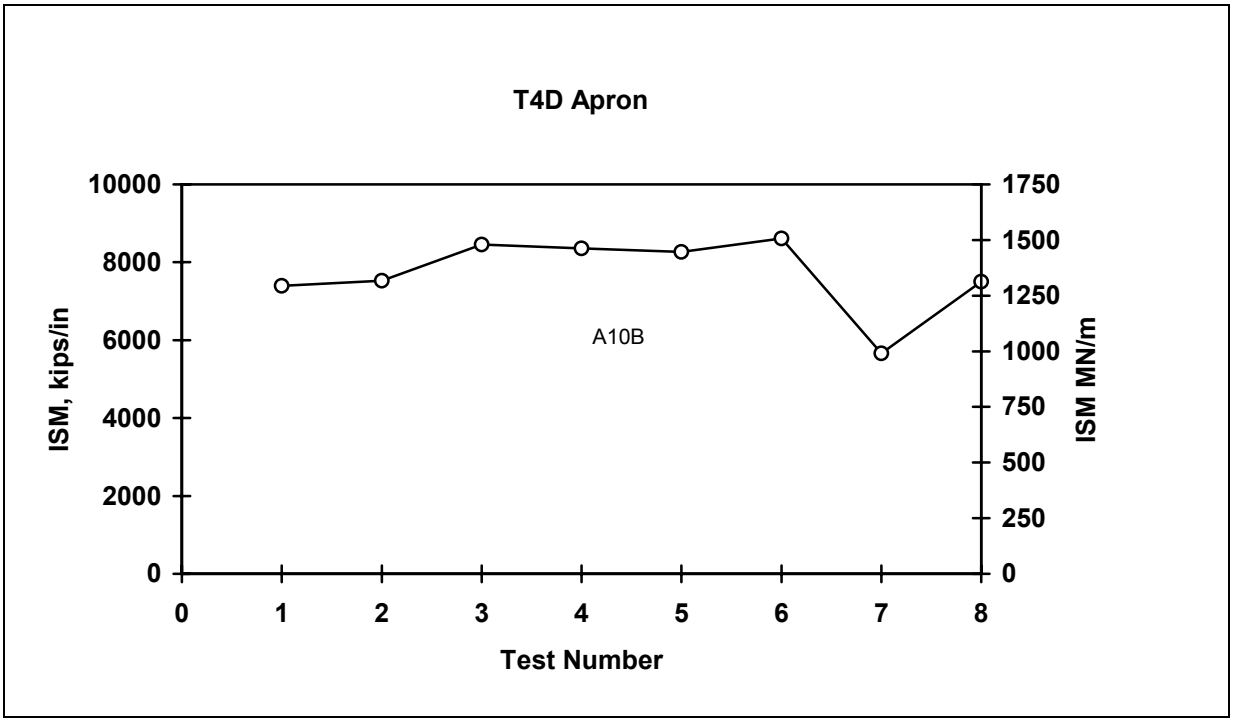


Figure B21. ISM profile, T4D Apron, Feature A10B

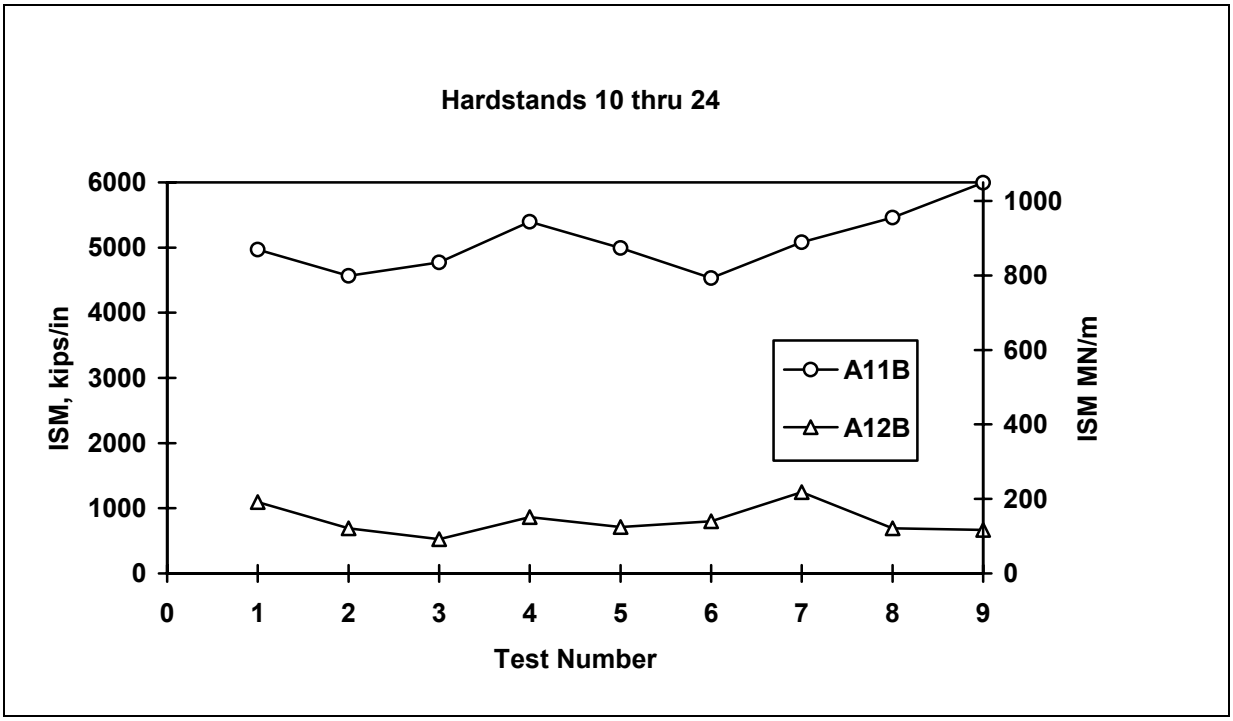


Figure B22. ISM profile, Hardstands 10 thru 24, Features A11B and A12B

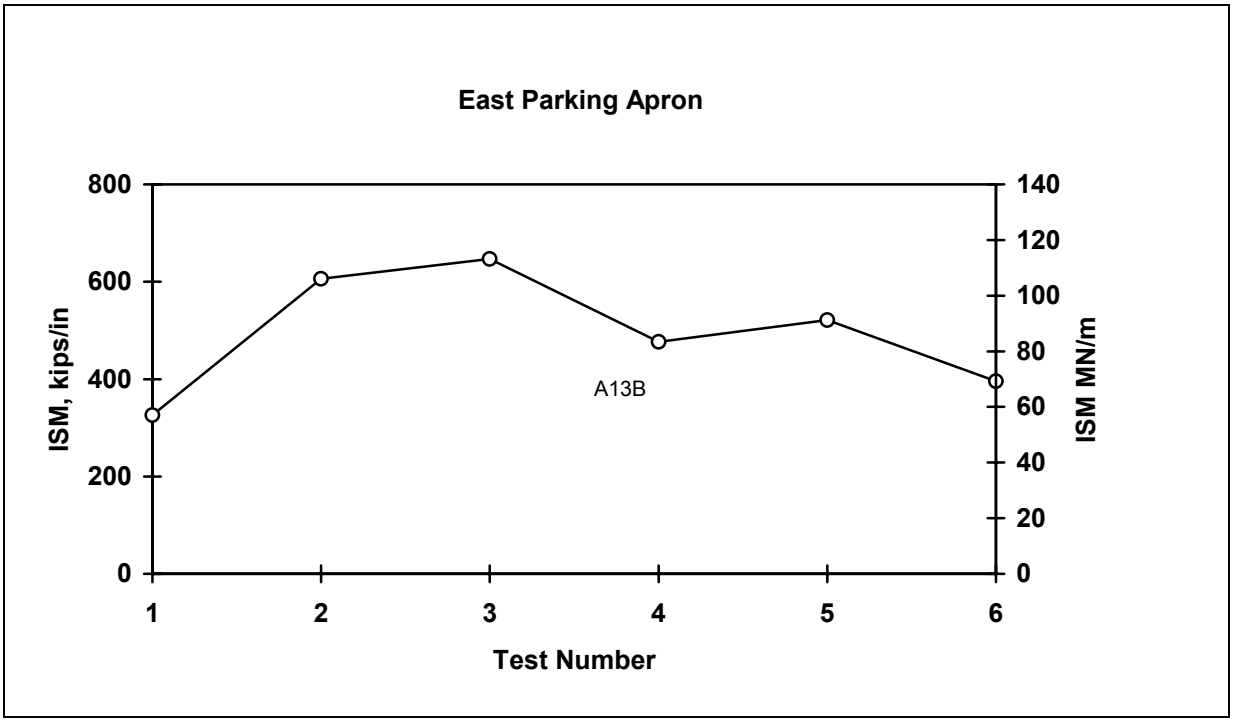


Figure B23. ISM profile, East Parking Apron, Feature A13B

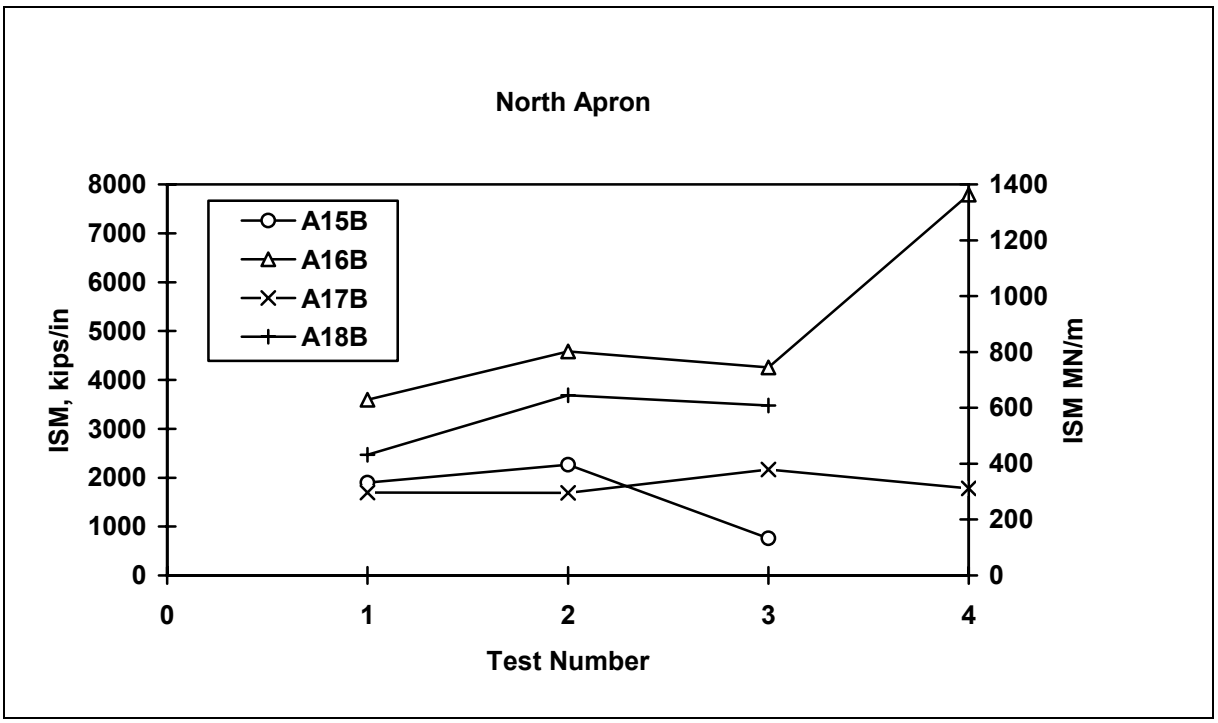


Figure B24. ISM profile, North Apron, Features A15B thru A18B

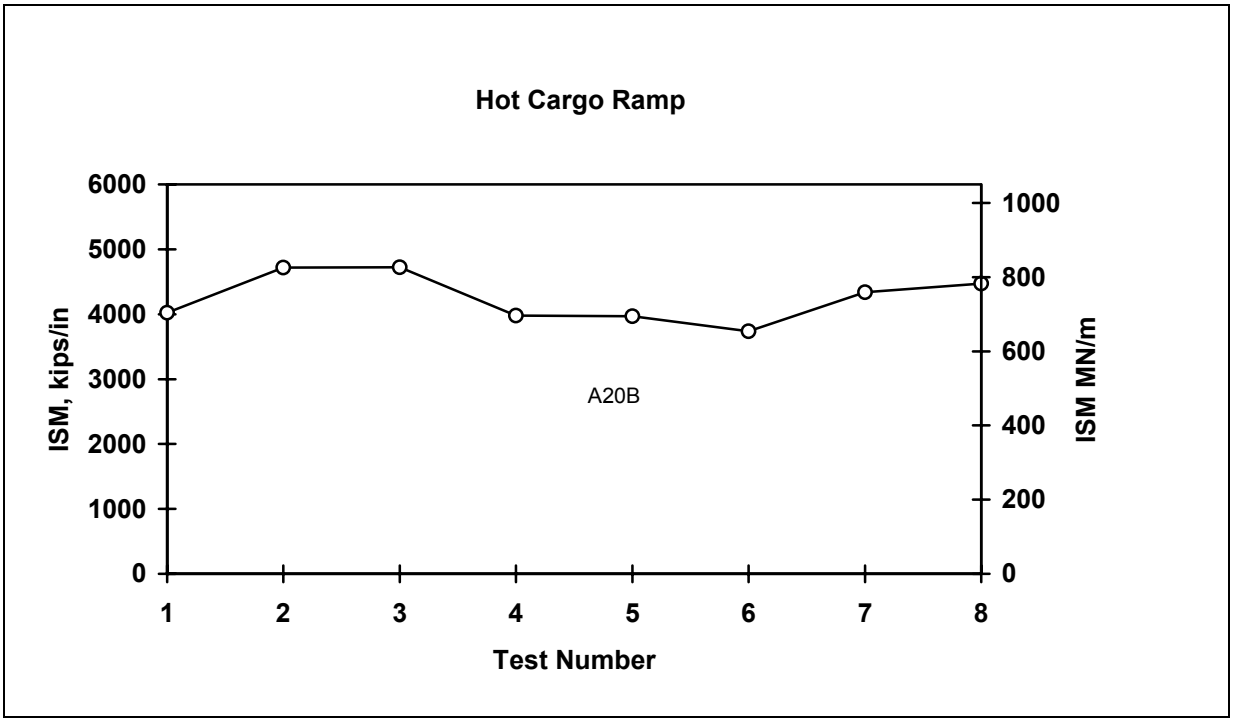


Figure B25. ISM profile, Hot Cargo Ramp, Feature A20B

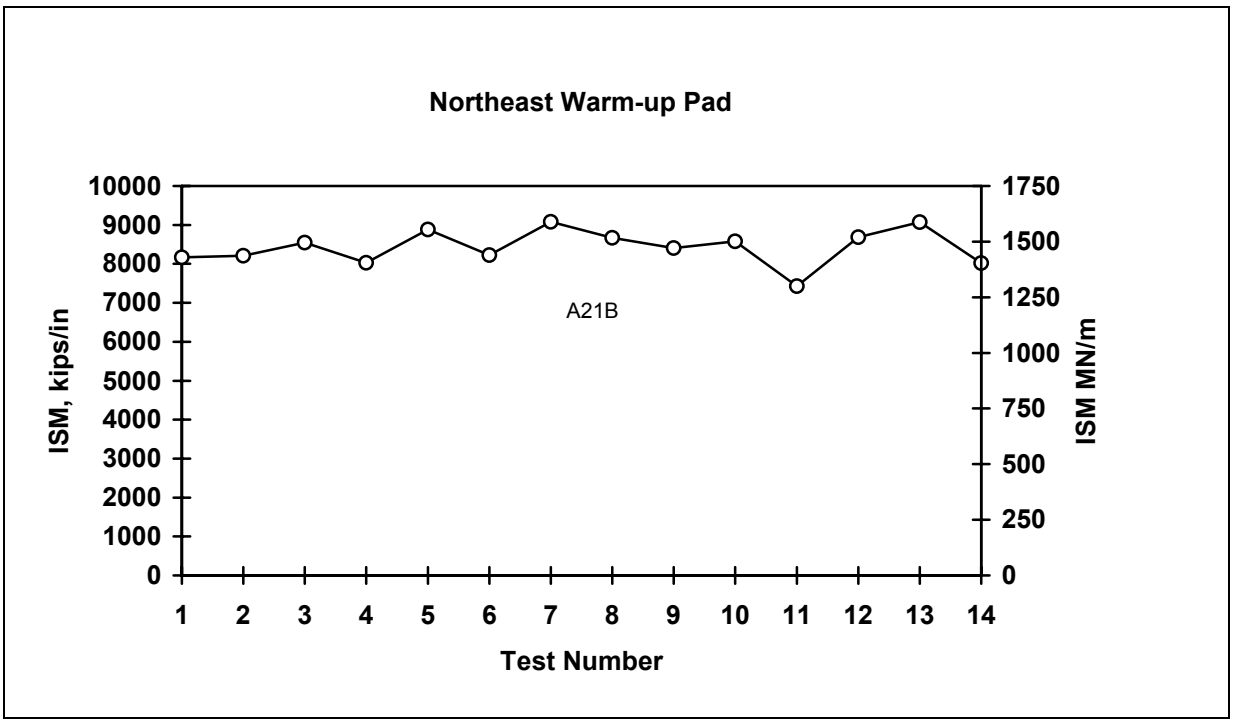


Figure B26. ISM profile, Northeast Warm-up Pad, Feature A21B

Table B1
NDT Test Results, Representative Basins

Feature	ISM MN/m (kips/in.)	Load kN (lb)	Deflection, µm (mils) D1	D2	D3	D4	D5	D6	D7
Runway 03-21									
R1A	1 922 (10,980)	229 (51,607)	119 (4.7)	104 (4.1)	97 (3.8)	91 (3.6)	84 (3.3)	79 (3.1)	71 (2.8)
R3A	1 859 (10,624)	227 (50,995)	122 (4.8)	107 (4.2)	99 (3.9)	94 (3.7)	86 (3.4)	81 (3.2)	74 (2.9)
R4C	1 280 (7,313)	224 (50,463)	175 (6.9)	163 (6.4)	155 (6.1)	142 (5.6)	132 (5.2)	119 (4.7)	109 (4.3)
R8A	1 551 (8,863)	225 (50,519)	145 (5.7)	130 (5.1)	124 (4.9)	117 (4.6)	107 (4.2)	99 (3.9)	91 (3.6)
R10A	918 (5,249)	219 (49,343)	239 (9.4)	216 (8.5)	203 (8.0)	191 (7.5)	178 (7.0)	160 (6.3)	147 (5.8)
Taxiway H									
T1A	994 (5,682)	222 (50,002)	224 (8.8)	206 (8.1)	188 (7.4)	173 (6.8)	155 (6.1)	137 (5.4)	122 (4.8)
Taxiway J									
T2A	1 100 (6,285)	224 (50,280)	203 (8.0)	183 (7.2)	165 (6.5)	147 (5.8)	130 (5.1)	114 (4.5)	99 (3.9)
Taxiway I									
T3A	1 038 (5,933)	224 (50,427)	216 (8.5)	198 (7.8)	180 (7.1)	165 (6.5)	150 (5.9)	130 (5.1)	119 (4.7)
Taxiway A									
T4A	1 723 (9,848)	232 (52,195)	134 (5.3)	124 (4.9)	117 (4.6)	109 (4.3)	102 (4.0)	94 (3.7)	86 (3.4)
Taxiway B									
T5A	1 676 (9,578)	230 (51,722)	137 (5.4)	124 (4.9)	117 (4.6)	114 (4.5)	107 (4.2)	99 (3.9)	91 (3.6)
Taxiway G									
T7B	1 017 (5,810)	225 (50,550)	221 (8.7)	211 (8.3)	198 (7.8)	188 (7.4)	175 (6.9)	160 (6.3)	145 (5.7)
Taxiway F									
T8B	120 (686)	159 (35,717)	1 323 (52.1)	508 (50.0)	272 (10.7)	168 (6.6)	114 (4.5)	86 (3.4)	71 (2.8)
T9B	181 (1,035)	160 (36,043)	884 (34.8)	559 (22.0)	323 (12.7)	213 (8.4)	150 (5.9)	114 (4.5)	94 (3.7)
Taxiway K									
T10B	901 (5,148)	222 (49,939)	246 (9.7)	223 (8.8)	201 (7.9)	178 (7.0)	157 (6.2)	135 (5.3)	117 (4.6)
Taxiway C									
T11A	1 526 (8,722)	225 (50,590)	147 (5.8)	135 (5.3)	127 (5.0)	122 (4.8)	112 (4.4)	104 (4.1)	97 (3.8)
T12A	1 371 (7,837)	227 (50,940)	165 (6.5)	145 (5.7)	135 (5.3)	130 (5.1)	117 (4.6)	109 (4.3)	99 (3.9)
T13A	1 251 (7,151)	223 (50,058)	178 (7.0)	163 (6.4)	155 (6.1)	145 (5.7)	135 (5.3)	124 (4.9)	114 (4.5)
T14A	1 762 (10,068)	228 (51,349)	130 (5.1)	117 (4.6)	112 (4.4)	104 (4.1)	97 (3.8)	89 (3.5)	86 (3.4)
T16A	1 378 (7,874)	217 (48,818)	157 (6.2)	142 (5.6)	135 (5.3)	124 (4.9)	114 (4.5)	104 (4.1)	94 (3.7)

(Sheet 1 of 3)

Table B1 (Continued)

Feature	ISM MN/m (kips/in.)	Load kN (lb)	Deflection, µm (mils) D1	D2	D3	D4	D5	D6	D7
Taxiway D									
T17A	1 358 (7,763)	224 (50,459)	165 (6.5)	147 (5.8)	137 (5.4)	130 (5.1)	117 (4.6)	107 (4.2)	99 (3.9)
Taxiway E									
T18B	1 326 (7,576)	219 (49,244)	165 (6.5)	145 (5.7)	135 (5.3)	127 (5.0)	117 (4.6)	107 (4.2)	99 (3.9)
North Apron Washrack Taxiway									
T19B	430 (2,460)	218 (48,950)	505 (19.9)	485 (19.1)	455 (17.9)	422 (16.6)	376 (14.8)	335 (13.2)	292 (11.5)
North Apron Hardstand Taxiways 25, 26 and 27									
T20B	119 (681)	124 (27,935)	1 041 (41.0)	572 (22.5)	274 (10.8)	168 (6.6)	124 (4.9)	94 (3.7)	76 (3.0)
DAACG Ramp									
A1B	1 101 (6,293)	224 (50,340)	203 (8.0)	185 (7.3)	170 (6.7)	155 (6.1)	137 (5.4)	122 (4.8)	107 (4.2)
Southwest Warm-up Apron									
A2B	2 014 (11,507)	230 (51,782)	114 (4.5)	104 (4.1)	99 (3.9)	94 (3.7)	89 (3.4)	812 (3.2)	74 (2.9)
West Apron Extension									
A3B	317 (1,810)	217 (48,679)	683 (26.9)	602 (23.7)	508 (20.0)	427 (16.8)	295 (11.6)	231 (9.1)	180 (7.1)
Hangar Apron									
A4B	409 (2,335)	219 (49,275)	536 (21.1)	452 (17.8)	386 (15.2)	318 (12.5)	251 (9.9)	196 (7.7)	157 (6.2)
A5B	753 (4,303)	224 (50,348)	297 (11.7)	272 (10.7)	246 (9.7)	218 (8.6)	191 (7.5)	170 (6.7)	145 (5.7)
A6B	645 (3,688)	223 (50,153)	345 (13.6)	315 (12.4)	282 (11.1)	249 (9.8)	211 (8.3)	183 (7.2)	155 (6.1)
Operational Apron									
A7B	124 (707)	130 (29,206)	1 049 (41.3)	696 (27.4)	462 (18.2)	295 (11.6)	201 (7.9)	145 (5.7)	107 (4.2)
A8B	140 (800)	133 (29,830)	947 (37.3)	607 (23.9)	427 (16.8)	297 (11.7)	198 (7.8)	137 (5.4)	99 (3.9)
Heavy Ramp									
A9B	572 (3,269)	222 (50,014)	389 (15.3)	338 (13.3)	287 (11.3)	249 (9.8)	213 (8.4)	180 (7.1)	155 (6.1)
T4D Apron									
A10B	1 312 (7,499)	223 (50,241)	170 (6.7)	155 (6.1)	145 (5.7)	137 (5.4)	124 (4.9)	112 (4.4)	102 (4.0)
Hardstands 10 thru 24									
A11B	893 (5,103)	229 (51,536)	257 (10.1)	231 (9.1)	211 (8.3)	196 (7.7)	175 (6.9)	157 (6.2)	140 (5.5)
A12B	140 (802)	157 (35,276)	1 118 (44.0)	592 (23.3)	340 (13.4)	221 (8.7)	155 (6.1)	119 (4.7)	99 (3.9)
East Parking Apron									
A13B	91 (522)	78 (17,527)	853 (33.6)	455 (17.9)	221 (8.7)	135 (5.3)	97 (3.8)	76 (3.0)	64 (2.5)

(Sheet 2 of 3)

Table B1 (Concluded)

Feature	ISM MN/m (kips/in.)	Load kN (lb)	Deflection, μm (mils) D1	D2	D3	D4	D5	D6	D7
North Apron Washrack									
A14B	740 (4,228)	220 (49,466)	297 (11.7)	272 (10.7)	251 (9.9)	229 (9.0)	203 (8.0)	178 (7.0)	160 (6.3)
North Parking Apron									
A15B	333 (1,903)	218 (49,089)	655 (25.8)	622 (24.5)	559 (22.0)	493 (19.4)	419 (16.5)	356 (14.0)	295 (11.6)
A16B	748 (4,272)	224 (50,407)	300 (11.8)	274 (10.8)	249 (9.8)	226 (8.9)	201 (7.9)	178 (7.0)	155 (6.1)
A17B	297 (1,697)	214 (48,203)	721 (28.4)	688 (27.1)	622 (24.5)	549 (21.6)	467 (18.4)	391 (15.4)	318 (12.5)
A18B	607 (3,468)	219 (49,240)	361 (14.2)	338 (13.3)	318 (12.5)	227 (10.5)	229 (9.0)	193 (7.6)	165 (6.5)
A19B	91 (521)	123 (27,585)	1 344 (52.9)	732 (28.8)	358 (14.1)	218 (8.6)	155 (6.1)	119 (4.7)	99 (3.9)
Hot Cargo Ramp									
A20B	698 (3,987)	218 (49,041)	312 (12.3)	290 (11.4)	264 (10.4)	239 (9.4)	211 (8.3)	185 (7.3)	160 (6.3)
Northeast Warm-up Apron									
A21B	1 446 (8,262)	220 (49,569)	152 (6.0)	137 (5.4)	130 (5.1)	122 (4.8)	112 (4.4)	102 (4.0)	99 (3.9)

(Sheet 3 of 3)

Table B2
Summary of Modulus Values[1]

Feature	Surface Modulus MPa (psi[1])	Base Modulus MPa (psi[1])	Subgrade Modulus MPa (psi[1])
PCC Pavements			
R1A	88 720 (12,867,817)	--	236 (34,257)
R3A	55 237 (8,011,458)	--	193 (28,013)
R4C	54 742 (7,939,758)	--	152 (22,039)
R8A	78 612 (11,401,669)	1 551 (225,000)[2]	160 (23,208)
R10A	50 391 (7,308,570)	--	104 (15,074)
T1A	34 766 (5,042,356)	147 (21,319)[3]	147 (21,319)[3]
T2A	56 054 (8,130,032)	219 (31,793)[3]	219 (31,793)[3]
T3A	36 688 (5,277,594)	154 (22,372)[3]	154 (22,372)[3]
T4A	46 472 (6,740,239)	--	197 (28,587)
T5A	64 083 (9,294,504)	--	125 (18,149)
T7B	28 740 (4,168,314)	--	173 (25,056)
T10B	47 760 (6,927,048)	189 (27,359)[3]	189 (27,359)[3]
T11A	62 562 (9,073,886)	123 (17,816)[3]	123 (17,816)[3]
T12A	65 323 (9,474,260)	162 (23,521)[3]	162 (23,521)[3]
T13A	75 353 (10,929,044)	1 551 (225,000)[2]	123 (17,889)
T14A	65 835 (9,548,519)	1 551 (225,000)[2]	154 (22,282)
T16A	61 416 (8,907,578)	166 (24,086)[3]	166 (24,086)[3]
T17A	60 601 (8,789,462)	167 (24,260)[3]	167 (24,260)[3]
T18C	61 377 (8,902,028)	161 (23,398)[3]	161 (23,398)[3]
T19B	40 926 (5,935,745)	--	60 (8,646)
A1B	62 133 (9,011,647)	189 (27,357)[3]	189 (27,357)[3]
A2B	66 605 (9,660,262)	--	177 (25,728)
A3B	33 849 (4,909,404)	--	132 (19,094)
A4B	38 663 (5,607,594)	--	158 (22,982)

(Continued)

[1] Backcalculated modulus values using WESDEF.
[2] Layer modulus fixed.
[3] Base and subgrade combined.

Table B2 (Concluded)

Feature	Surface Modulus MPa (psi[1])	Base Modulus MPa (psi[1])	Subgrade Modulus MPa (psi[1])
PCC Pavements (continued)			
A5B	60 077 (8,713,417)	--	152 (22,114)
A6B	44 288 (6,423,471)	--	146 (21,244)
A9B	39 330 (5,704,267)	--	162 (23,468)
A10B	56 604 (8,209,734)	160 (23,164)[3]	160 (23,164)[3]
A11B	55 417 (8,037,528)	--	142 (20,563)
A14B	49 992 (7,250,749)	--	123 (17,876)
A15B	33 566 (4,868,406)	--	76 (11,001)
A16B	40 187 (5,828,586)	--	130 (18,832)
A17B	29 001 (4,206,303)	--	68 (9,836)
A18B	23 425 (3,397,487)	--	130 (18,865)
A20B	46 716 (6,775,521)	125 (18,100)[3]	125 (18,100)[3]
A21B	73 805 (10,784,482)	148 (21,448)[3]	148 (21,448)[3]
AC Pavements			
T8B	642 (93,128)[4]	553 (80,152)	230 (33,377)
T9B	4 217 (611,687)	804 (116,641)	182 (26,331)
T20B	2 766 (401,115)	344 (49,825)	168 (24,365)
A7B	1 845 (267,552)	981 (142,349)	115 (16,652)
A8B	1 414 (205,037)	819 (118,831)	122 (17,655)
A12B	1 834 (265,952)	562 (81,583)	169 (24,453)
A13B	2 032 (294,744)	444 (64,427)	136 (19,746)
A19B	2 667 (386,816)	400 (57,969)	132 (19,186)

[1] Backcalculated modulus values using WESDEF.
[2] Layer modulus fixed.
[3] Base and subgrade combined.
[4] AC modulus based on temperature at the time of testing.

Table B3
Joint Deflection Ratio

Facility	Station	Construction Date	Joint Ratio, D2/D1 (%)
R1A	2	1958	93
R3A	4	1959	83
R3A	8	1959	58
R4C	8	1959	88
R4C	22	1959	94
R4C	46	1959	92
R4C	68	1959	90
R4C	102	1959	92
R8A	122	2000	94
R8A	125	2000	78
R10A	129	1957	95
R10A	130	1957	82
		Average	86
T1A	19	2000	91
T1A	28	2000	93
T1A	33	2000	92
		Average	92
T2A	11	2002	80
T2A	19	2002	86
T2A	26	2002	90
		Average	85
T3A	2	2000	90
T3A	6	2000	92
T3A	11	2000	38
		Average	73
T4A	10	1959	87
T4A	37	1959	88
T4A	55	1959	89
		Average	88
T5A	8	1959	92
T5A	12	1959	87
T5A	35	1959	90
T5A	37	1959	88
T5A	48	1959	83
T5A	53	1959	88
		Average	87
T12A	11	2000	93
T12A	20	2000	86
T13A	23	1959	86
T13A	30	1959	89
T14A	38	1958	90
T14A	50	1958	90
T16A	55	2000	93
T16A	58	2000	90
		Average	89

(Continued)

Table B3 (Concluded)			
Facility	**Station**	**Construction Date**	**Joint Ratio, D2/D1 (%)**
T17A	3	2000	95
T17A	15	2000	93
T17A	37	2000	86
T17A	52	2000	92
		Average	92
A1B	19	2002	89
A1B	28	2002	91
A1B	33	2002	83
A1B	26	2002	96
		Average	90

Appendix C
Pavement Condition Survey and Results

Pavement Condition Survey

A pavement condition survey is a visual inspection of the airfield pavements to determine the present surface condition. The condition survey consists of inspecting the pavement surface for various types of distress, determining the severity of each distress, and measuring the quantity of each distress. The estimated quantities and severity of each distress type are used to compute the PCI for each feature. The PCI is a numerical indicator based on a scale from 0 to 100 and is determined by measuring pavement surface distress that reflects the surface condition of the pavement. Pavement condition ratings (from excellent to failed) are assigned to different levels of PCI values. These ratings and their respective PCI value definitions are shown in Figure C1. The distress types, severity levels, methods of survey, and PCI calculations are described in ASTM D5340-93.

The PCI and estimated distress quantities are determined for each feature. The information is based on inspection of a selected number of sample units. Sample units are subdivisions of a feature used exclusively to facilitate the inspection process and reduce the effort needed to determine distress quantities and the PCI. Each feature was divided into sample units. The sample units for AC pavement features were approximately 465 sq m (5,000 sq ft). A statistical sampling technique was used to determine the number of sample units to be inspected to provide a 95 percent confidence level. Sample units were chosen along the centerline of the taxiways and randomly on the runway and on the aprons. Sample unit locations for the various runway features are shown in Figure C2. Sample unit locations for the taxiway and apron features are shown in Figures C3 through C14. The surveyed sample units are circled. After the sample units were inspected, the mean PCI of all sample units within a feature was calculated and the feature was rated as to its condition: excellent, very good, good, fair, poor, very poor, or failed.

Analysis of PCI Data

The distress information collected during the survey was used with the Micro PAVER computer program to estimate the quantities of distress types for each feature. This information is presented along with the PCI, general rating, and distress mechanism (load, climate, or other) in Appendix E. Photos C1 through C10 show various types of distresses observed during the survey.

AR 420-72 (Headquarters, Department of the Army 2000) requires that all airfield pavements be maintained at or above the following PCI ranges:

All runways > 70
All primary taxiways ≥ 60
All aprons and secondary taxiways > 55

AR 420-72 (Headquarters, Department of the Army 2000) also requires that the following PCI range for airfield pavements shall be used for the Installation Status Report (ISR) rating:

70 < PCI ≤ 100 equals an ISR Green rating
55 < PCI ≤ 70 equals an ISR Amber rating
0 < PCI ≤ 55 equals an ISR Red rating

The PCI for each sample unit inspected was calculated and stored on a Micro PAVER file for BAAF. The mean PCI for each feature was then calculated to determine the general condition or rating of the feature as shown in Figure C15. A comparison of the 2002, 1992, and 1989 PCI results is summarized in Table C1. The PCI of ten of the airfield features decreased from one to twenty-nine points during the 1992 to 2002 period. This loss in PCI points is considered normal (4 to 6 points per year). The PCI of twenty-five of the airfield features remained the same or increased from one to eighty-six points during the 1997 to 2002 period. This was because of PCC reconstruction, spall repairs, and a joint sealant replacement project on Runway 3-21 and Taxiways A, B, C, D and E.

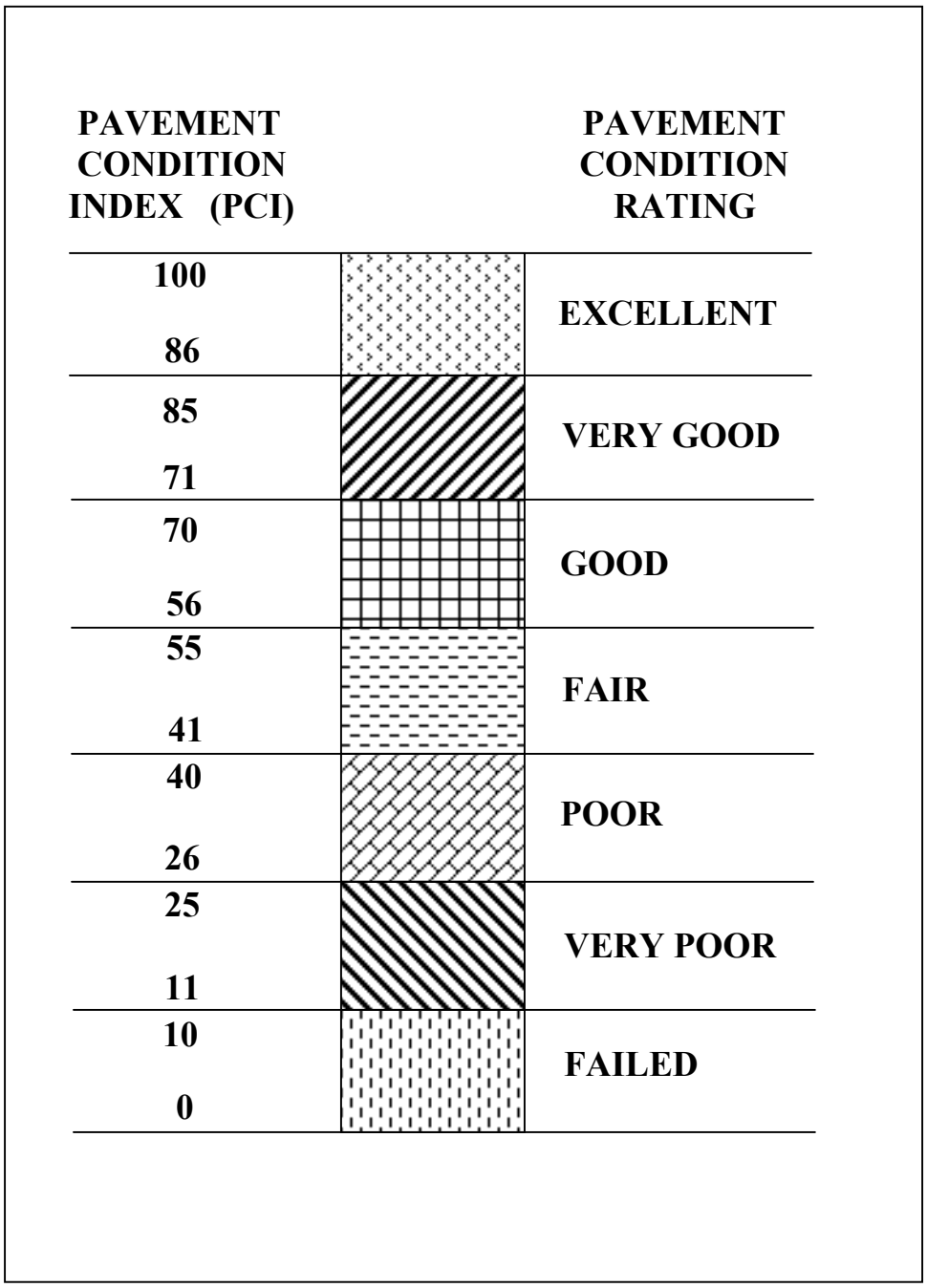


Figure C1. Scale for pavement condition rating

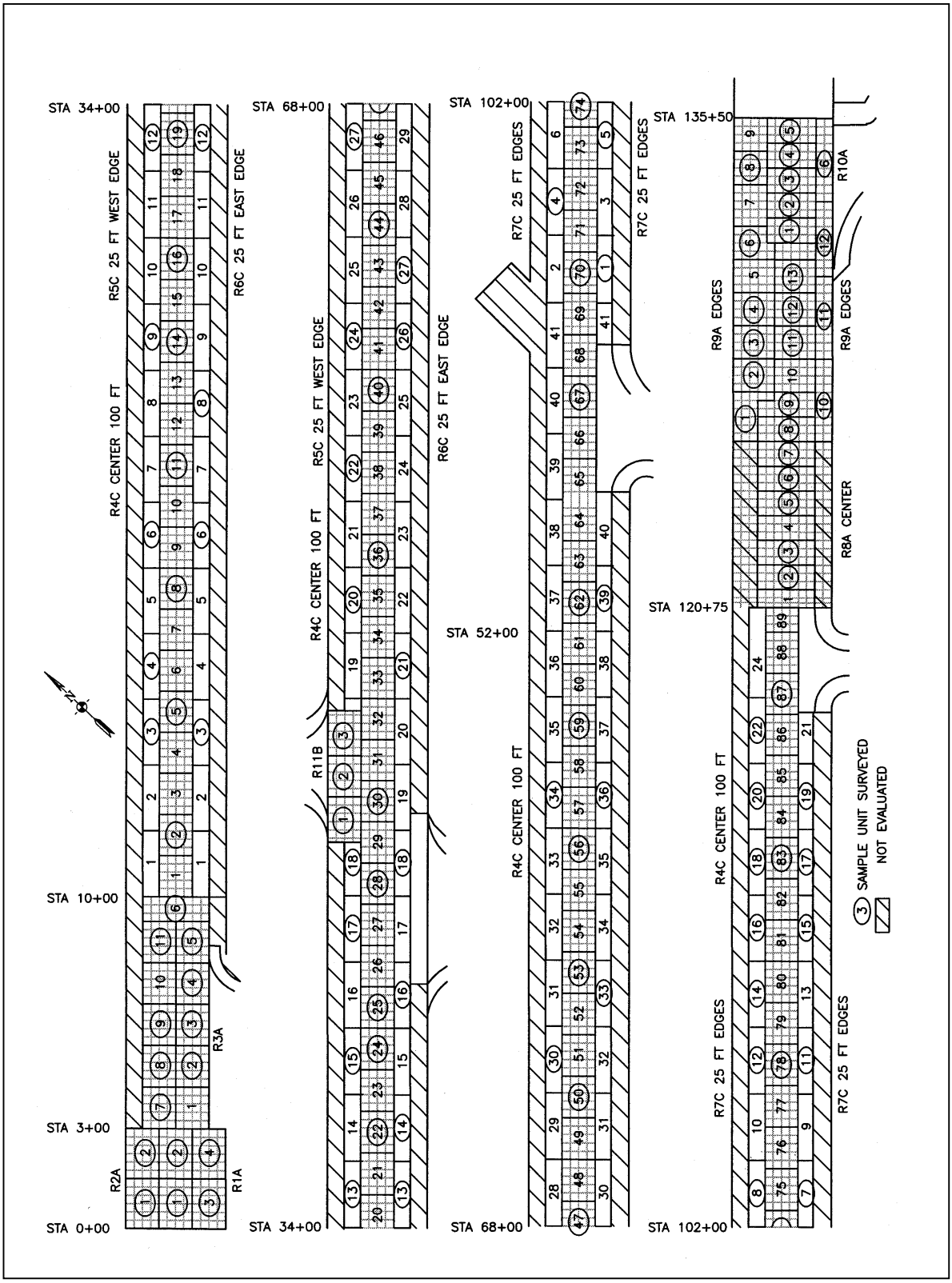


Figure C2. Sample unit layout, Runway 3-21, Features R1A through R11B

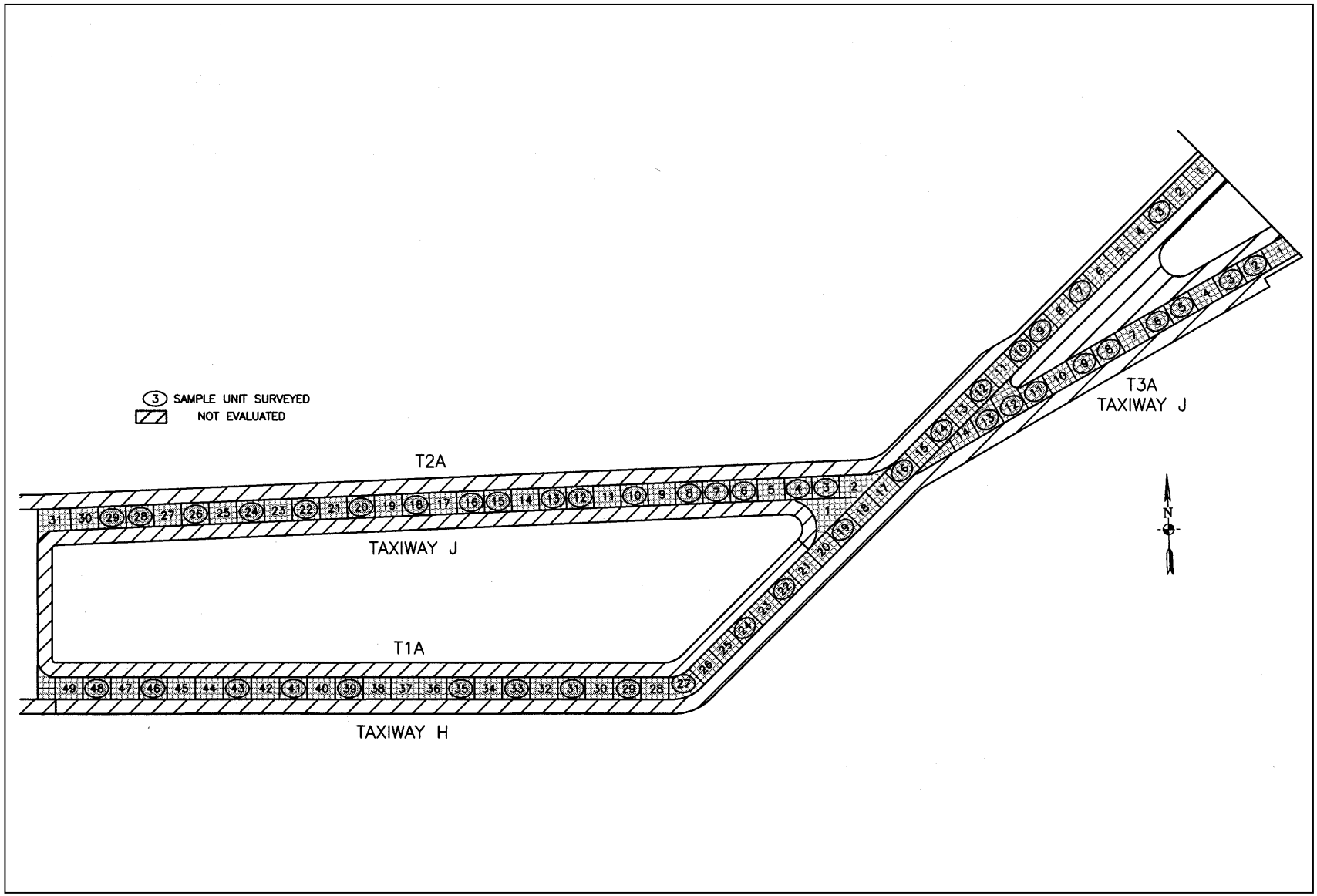


Figure C3. Sample unit layout, Taxiways H, J, and I (T1A, T2A, and T3A)

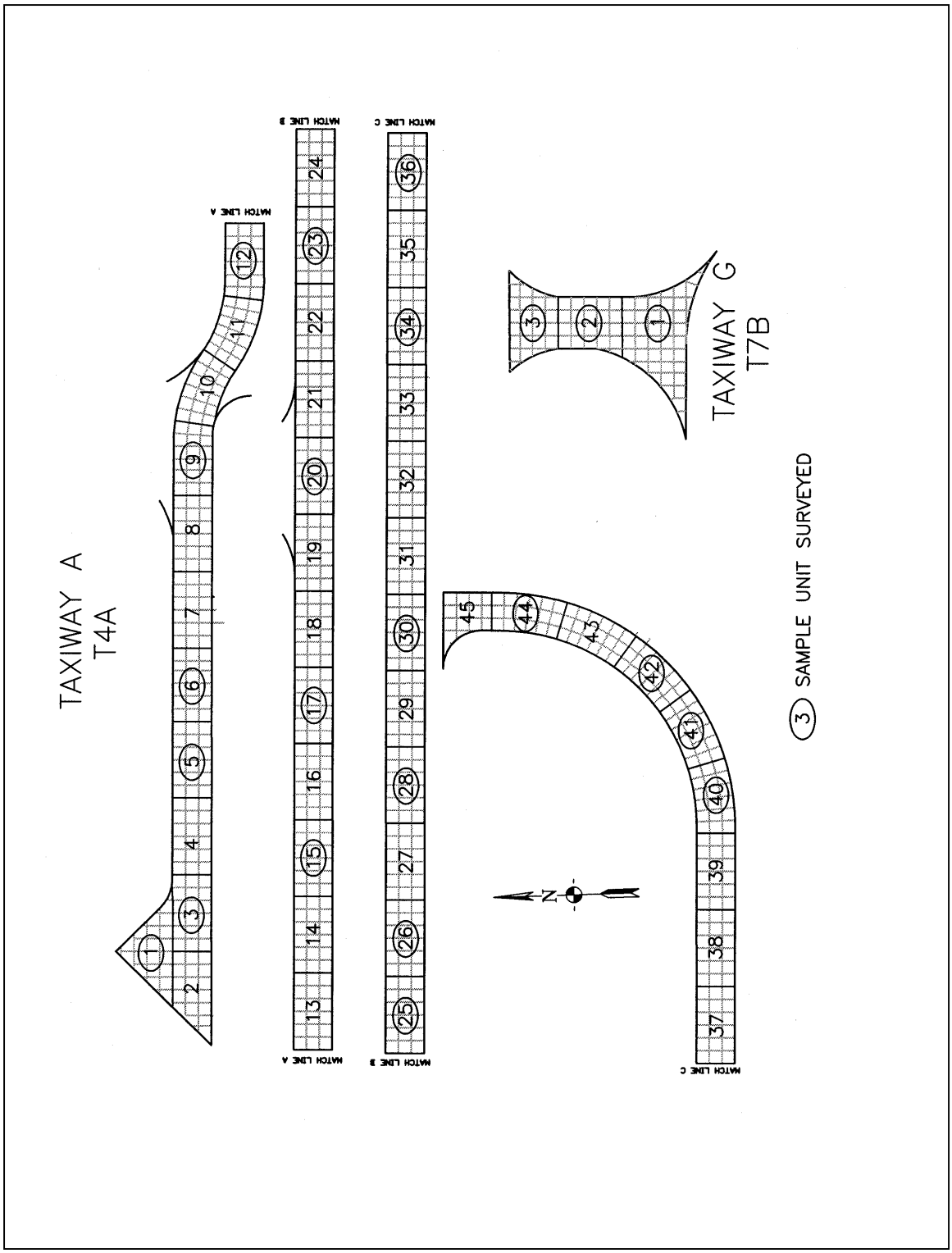


Figure C4. Sample unit layout, Taxiways A and G (T4A, and T7B)

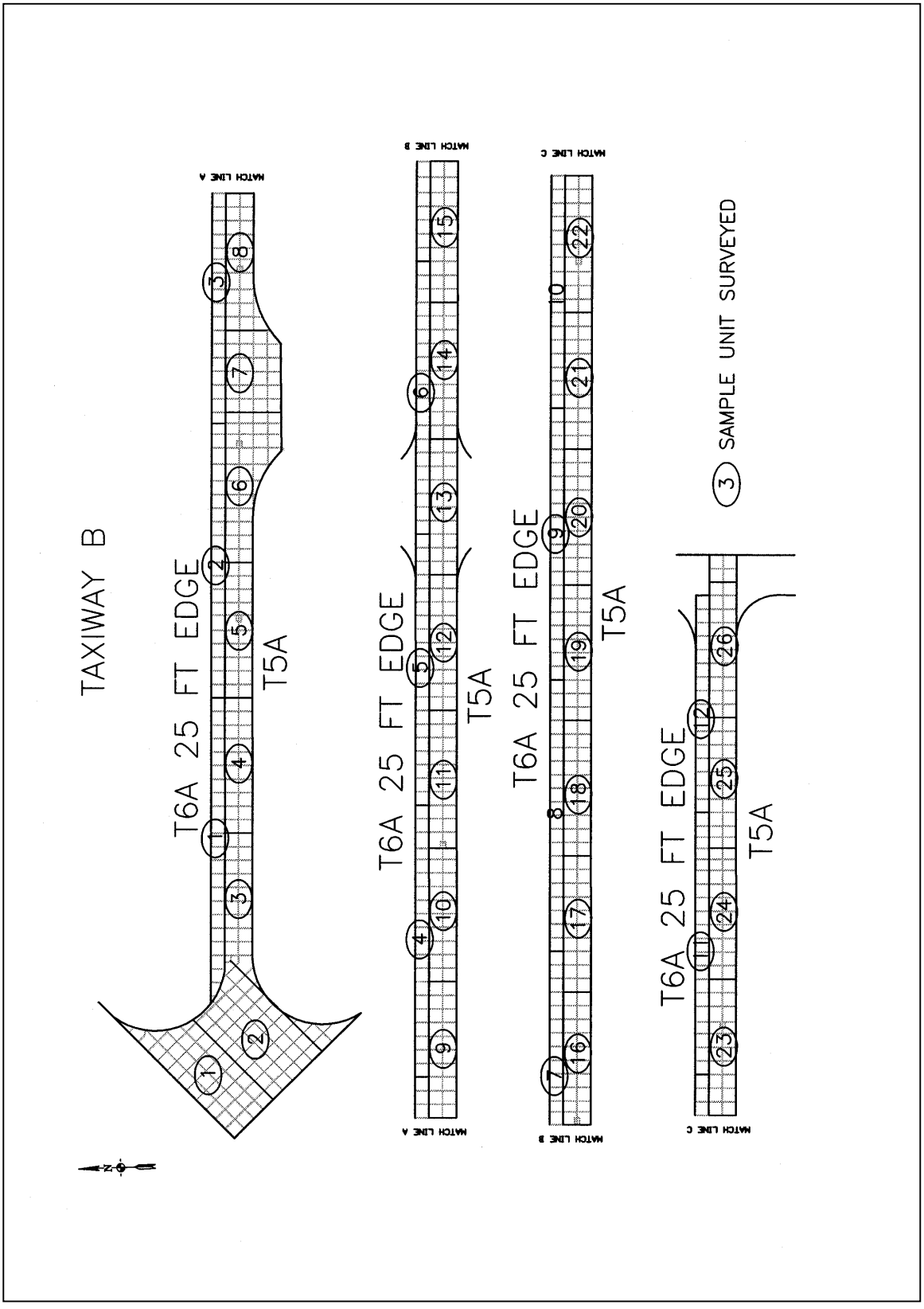


Figure C5. Sample unit layout, Taxiways B,(T5A,and T6A)

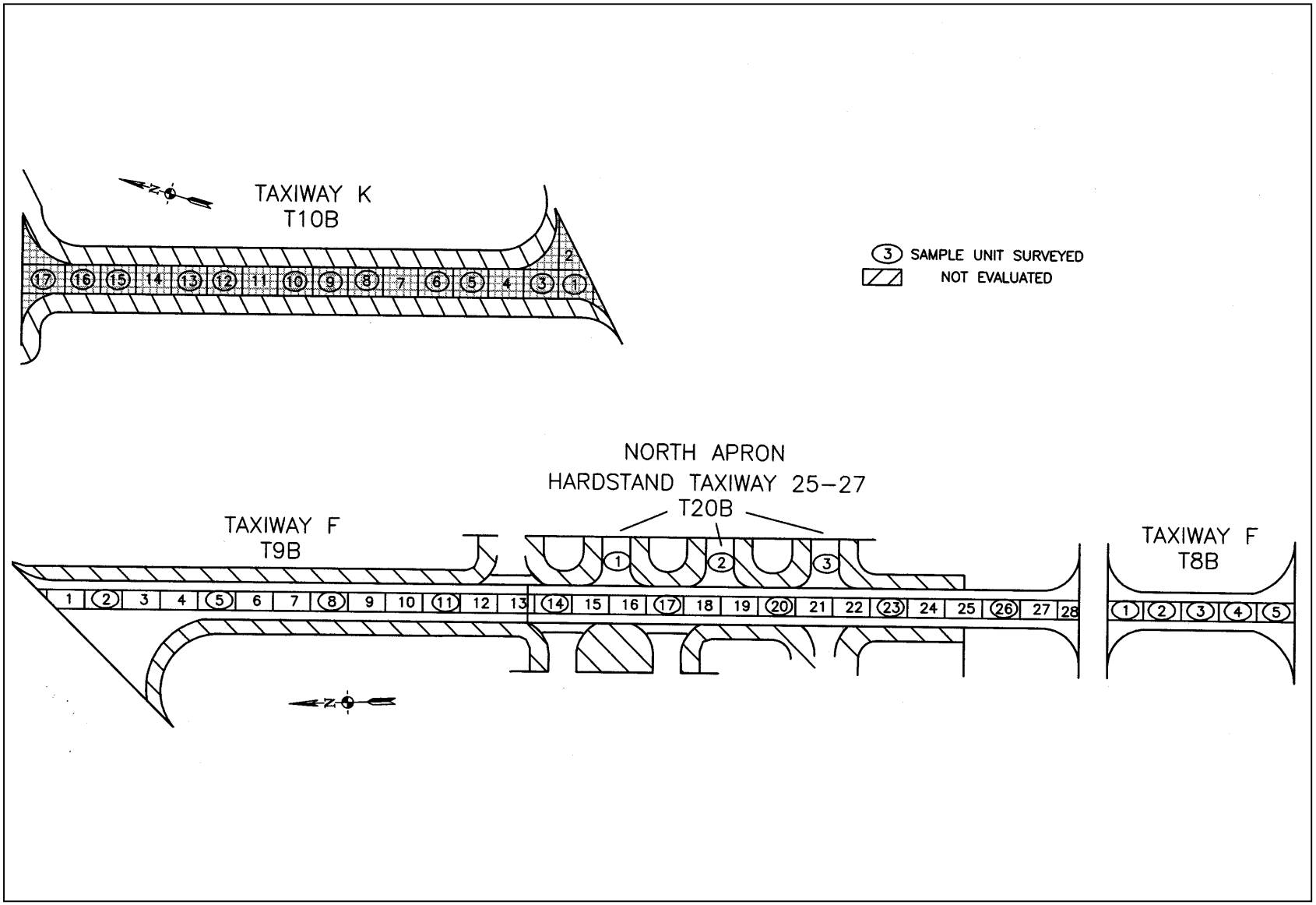


Figure C6. Sample unit layout, Taxiways F, K, and North Apron Hardstand Taxiway (T8B, T9B, T10B, and T20B)

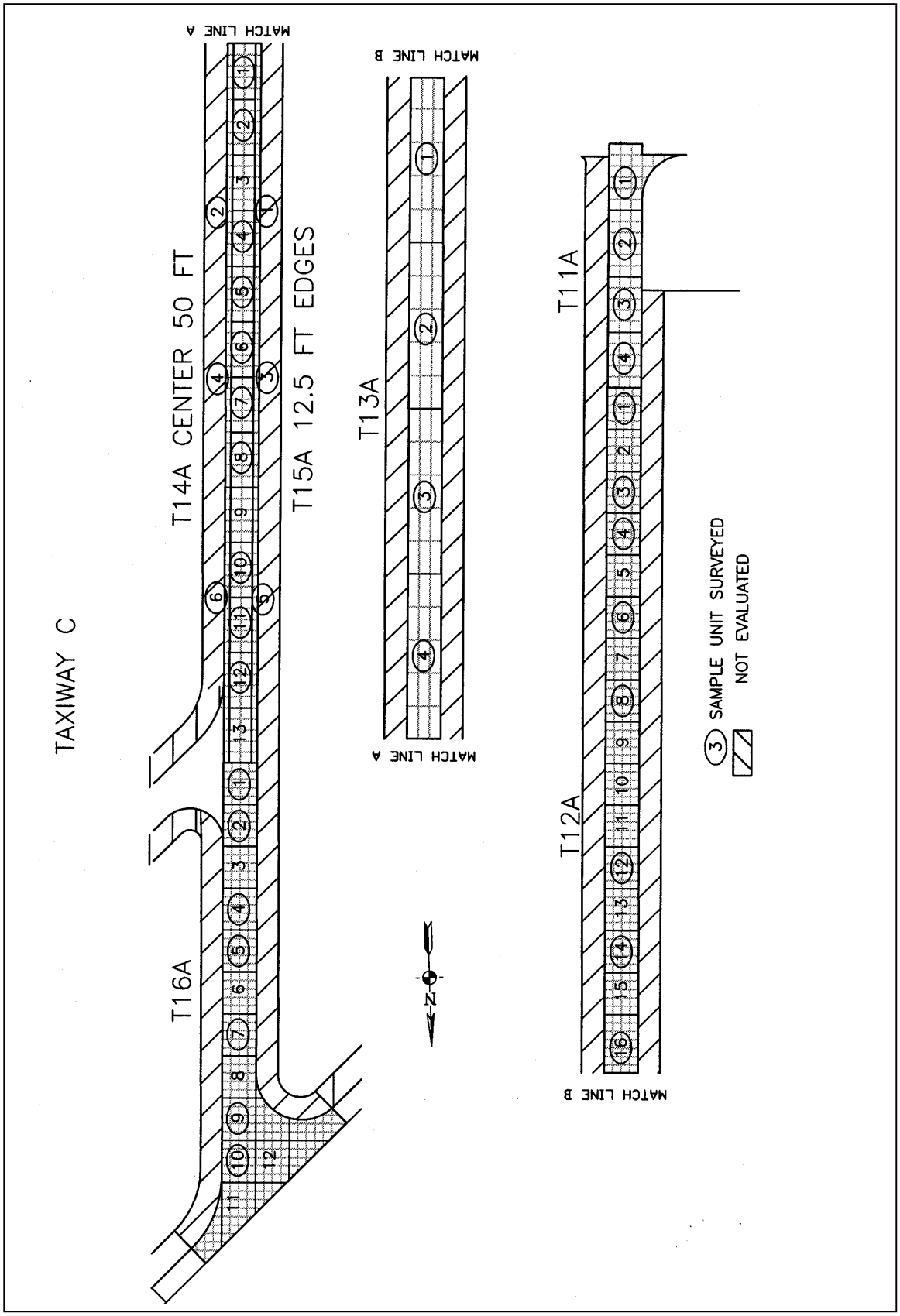


Figure C7. Sample unit layout, Taxiway C, (T11A, T12A, T13A, T14A, T15A, and T16A)

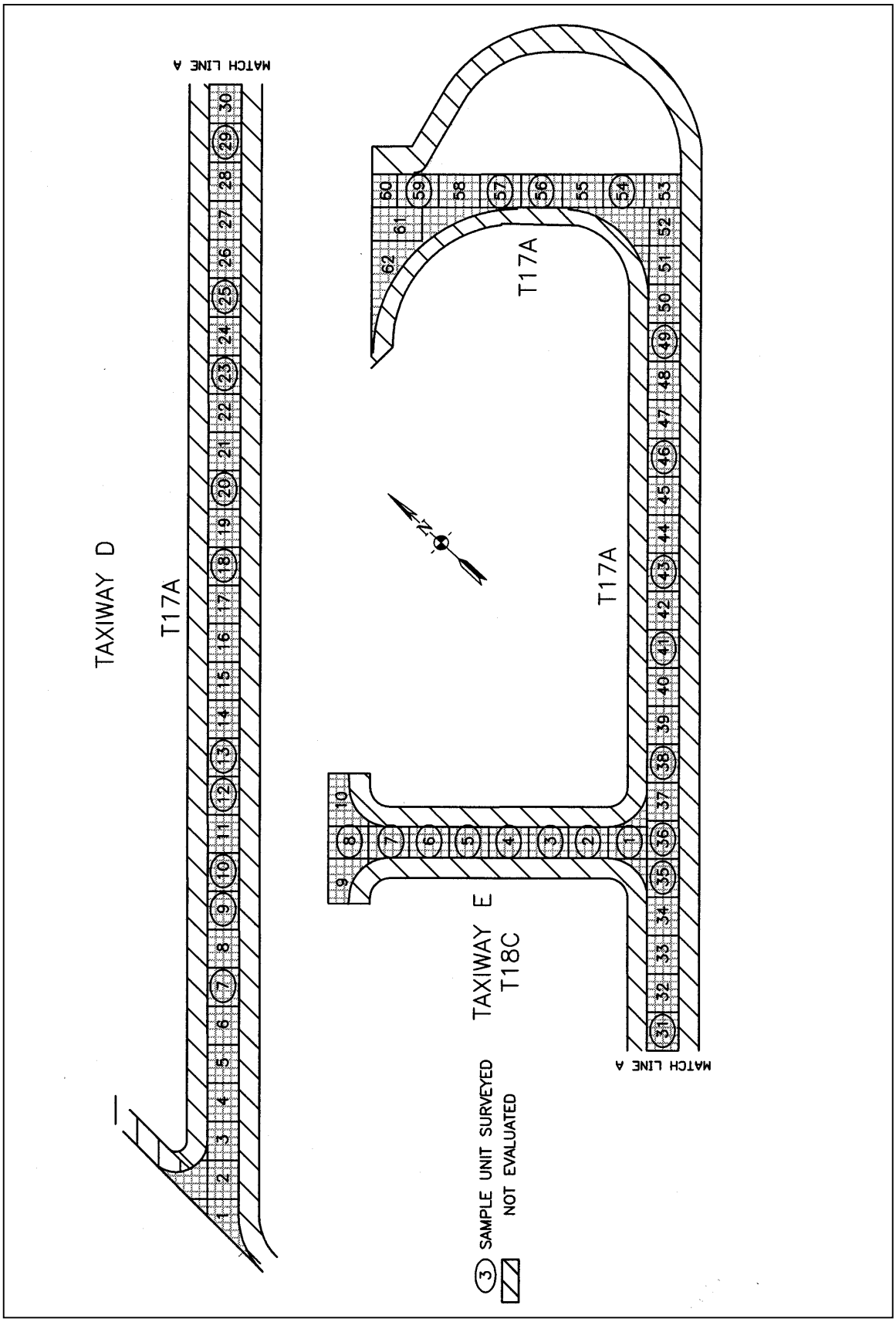


Figure C8. Sample unit layout, Taxiways D and E (T17A and T18C)

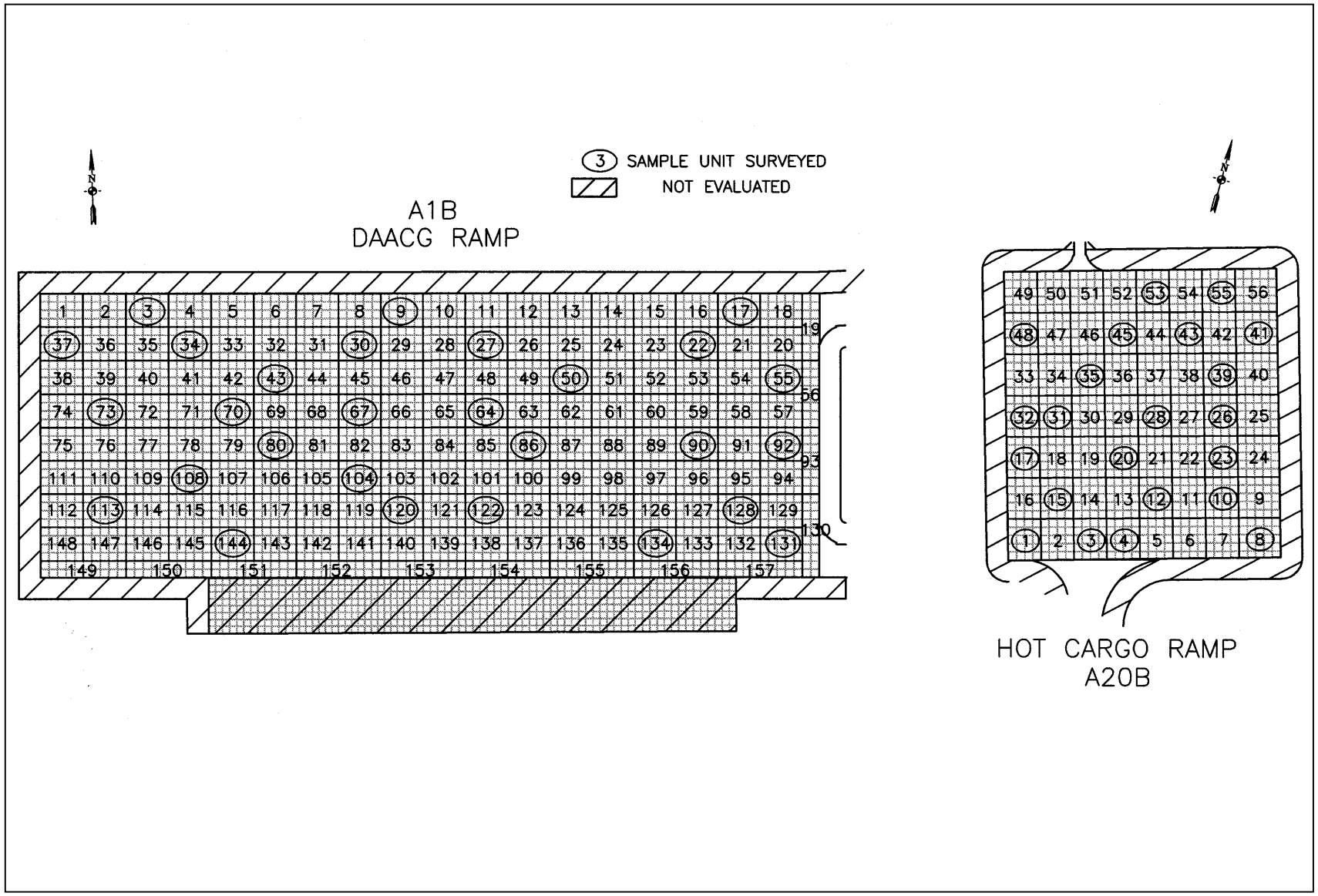


Figure C9. Sample unit layout, DAACG Ramp and the Hot Cargo Ramp (A1B and A20B)

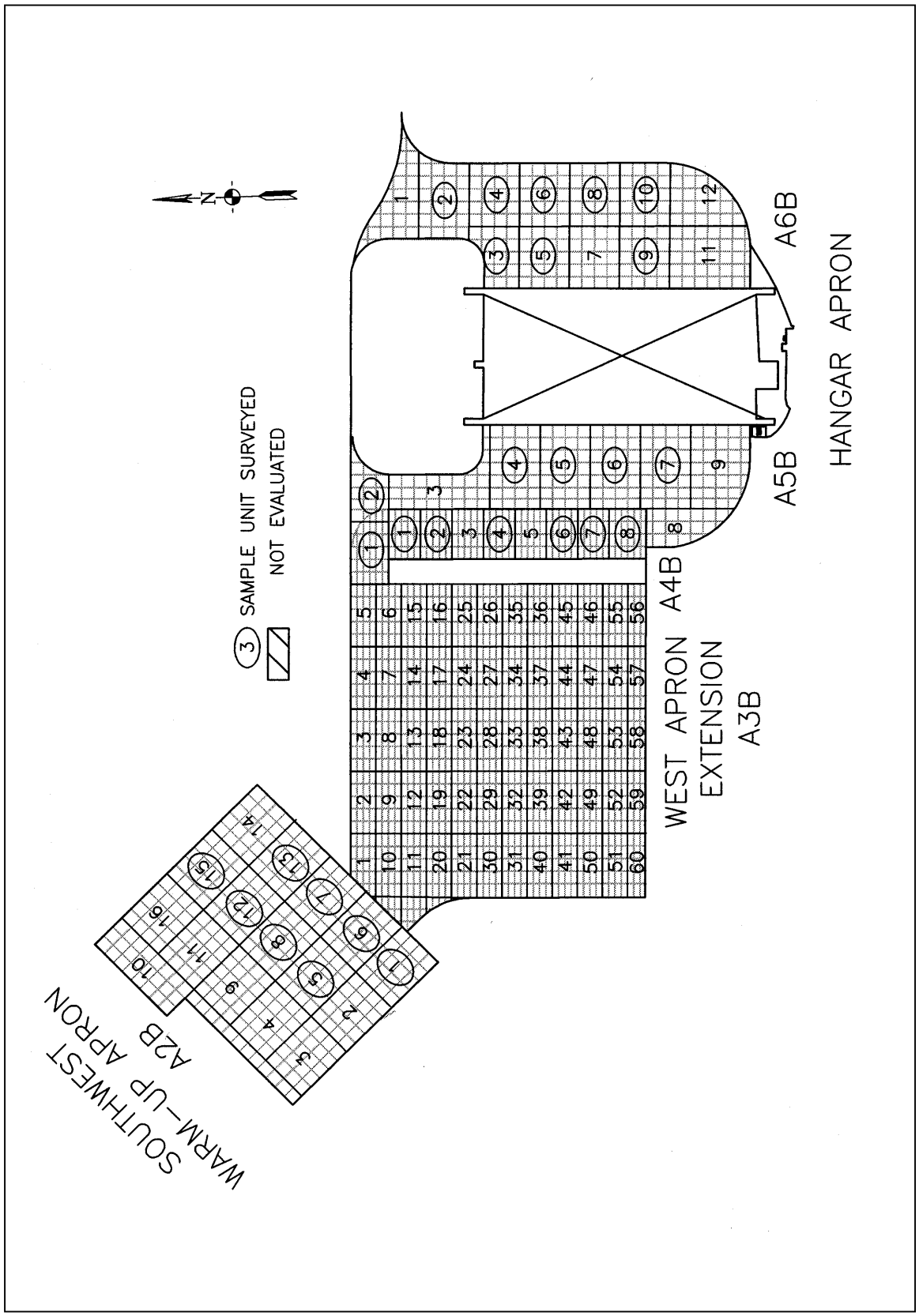
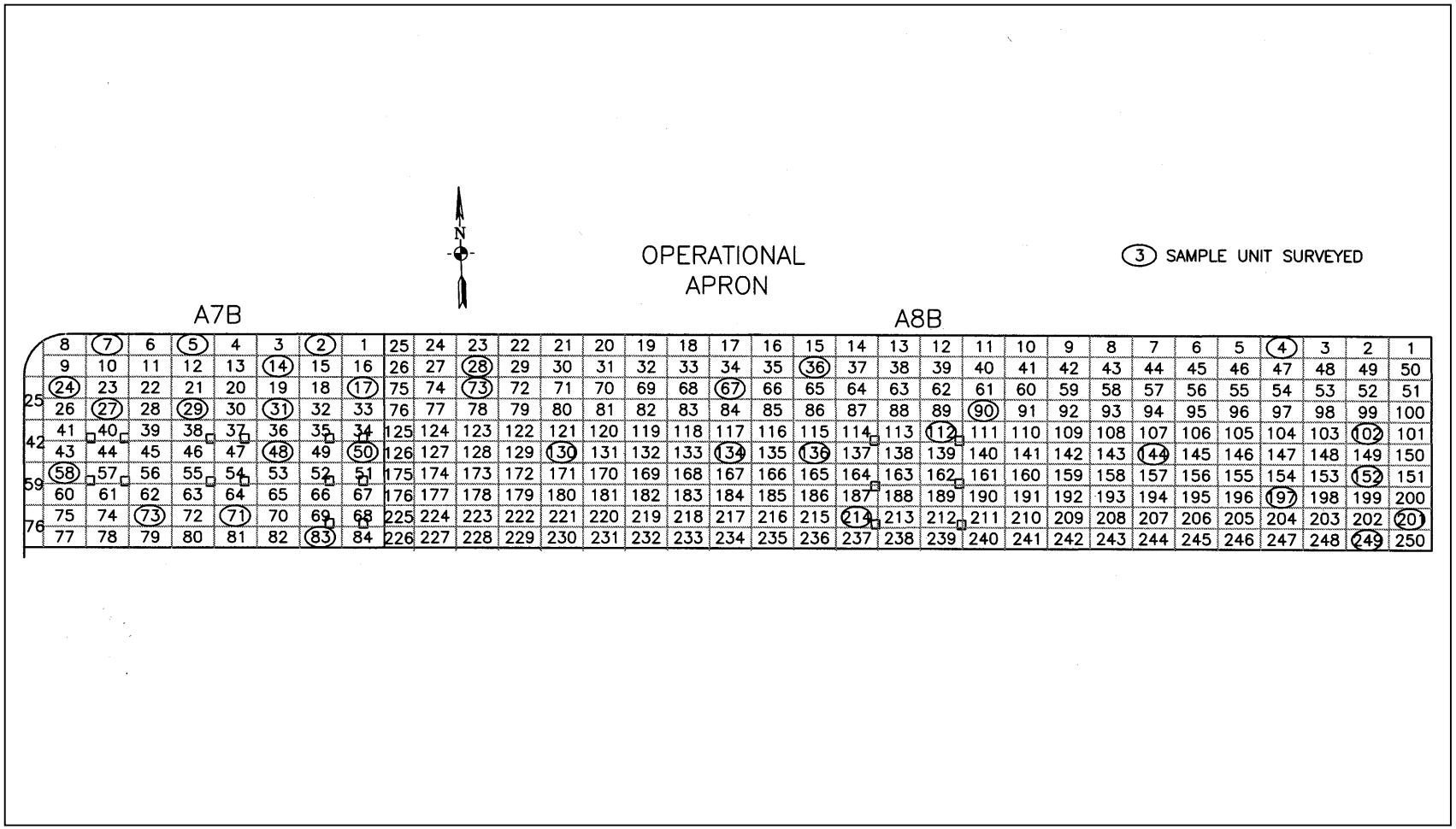


Figure C10. Sample unit layout, Southwest Warm-up Apron, West Apron Extension, and Hangar Apron (A2B, A3B, A4B, A5B, and A6B)



	8	(7)	6	(5)	4	3	(2)	1	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	(4)	3	2	1
	9	10	11	12	13	(14)	15	16	26	27	(28)	29	30	31	32	33	34	35	(36)	37	38	39	40	41	42	43	44	45	46	47	48	49	50
	(24)	23	22	21	20	19	18	(17)	75	74	(73)	72	71	70	69	68	(67)	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51
25	26	(27)	28	(29)	30	(31)	32	33	76	77	78	79	80	81	82	83	84	85	86	87	88	89	(90)	91	92	93	94	95	96	97	98	99	100
	41	40	39	38	37	36	35	34	125	124	123	122	121	120	119	118	117	116	115	114	113	(112)	111	110	109	108	107	106	105	104	103	(102)	101
42	43	44	45	46	47	(48)	49	(50)	126	127	128	129	(130)	131	132	133	(134)	135	(136)	137	138	139	140	141	142	143	(144)	145	146	147	148	149	150
	(58)	57	56	55	54	53	52	51	175	174	173	172	171	170	169	168	167	166	165	164	163	162	161	160	159	158	157	156	155	154	153	(152)	151
59	60	61	62	63	64	65	66	67	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	(197)	198	199	200
	75	74	(73)	72	(71)	70	69	68	225	224	223	222	221	220	219	218	217	216	215	(214)	213	212	211	210	209	208	207	206	205	204	203	202	(201)
76	77	78	79	80	81	82	(83)	84	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	(249)	250

Figure C11. Sample unit layout, Operational Apron (A7B and A8B)

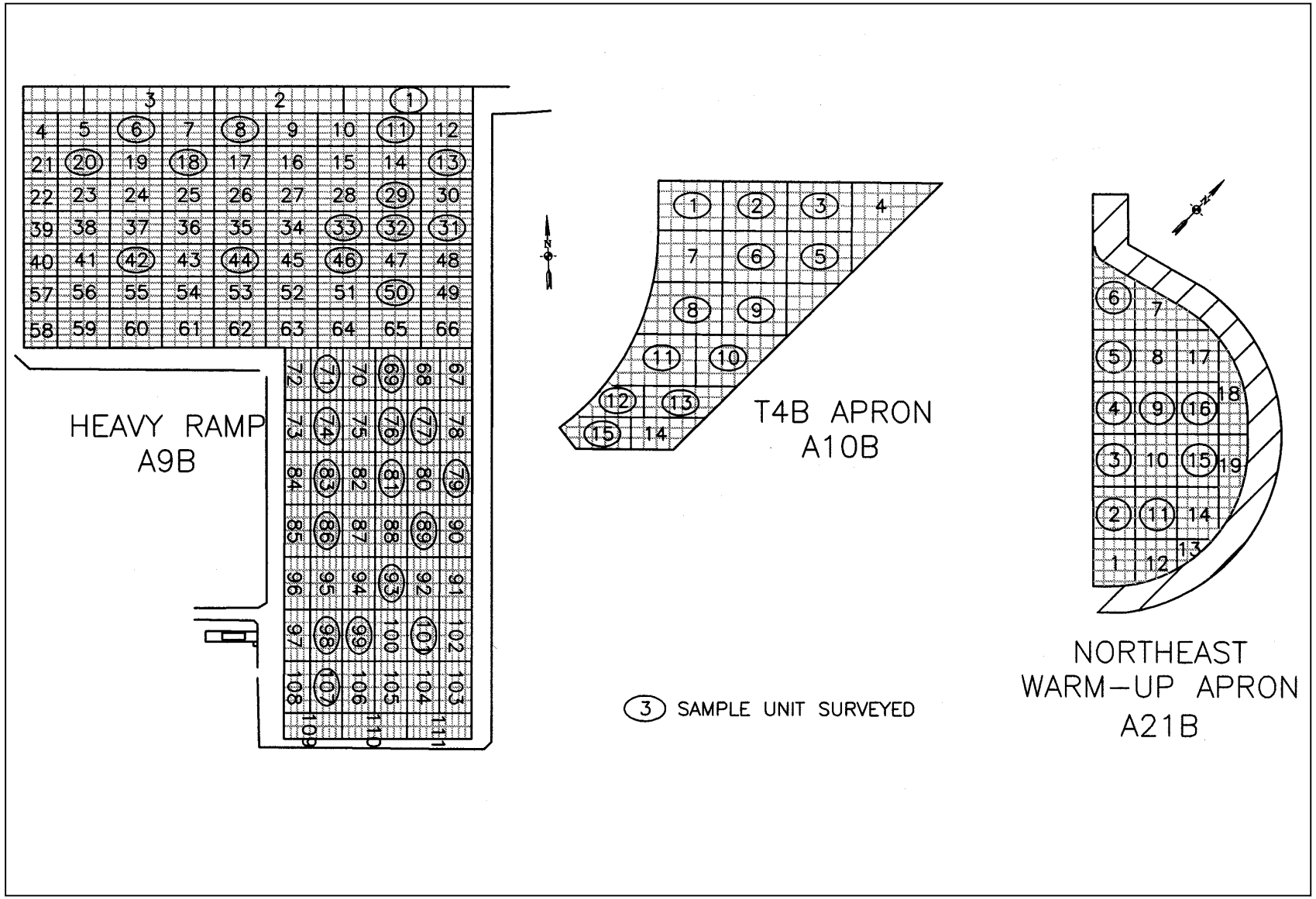


Figure C12. Sample unit layout, Heavy Ramp, T4B Apron, and the Northeast Warm-up Apron (A9B, A10B, and A21B)

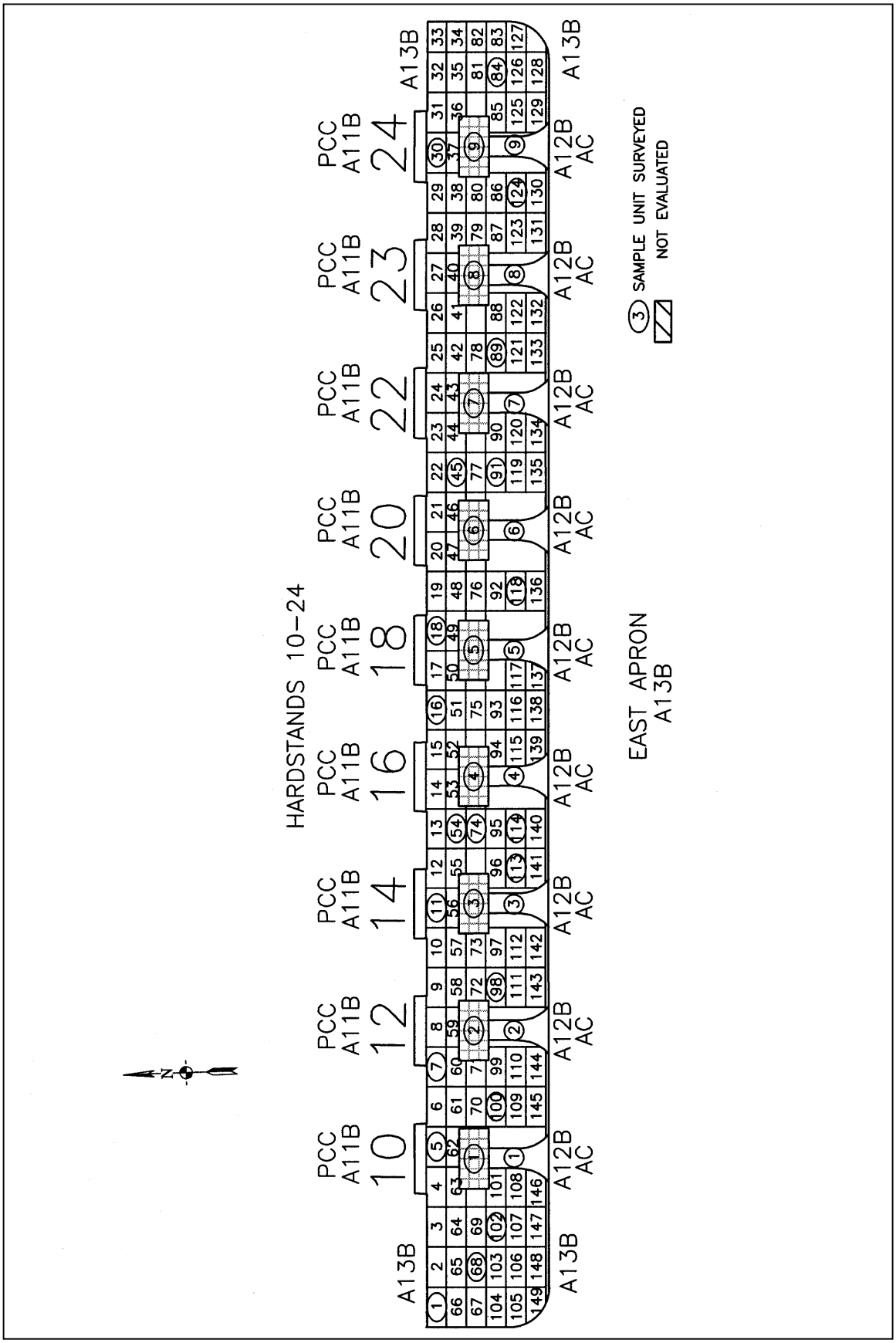


Figure C13. Sample unit layout, East Apron and Hardstands 10-24(A11B, A12B, and A13B)

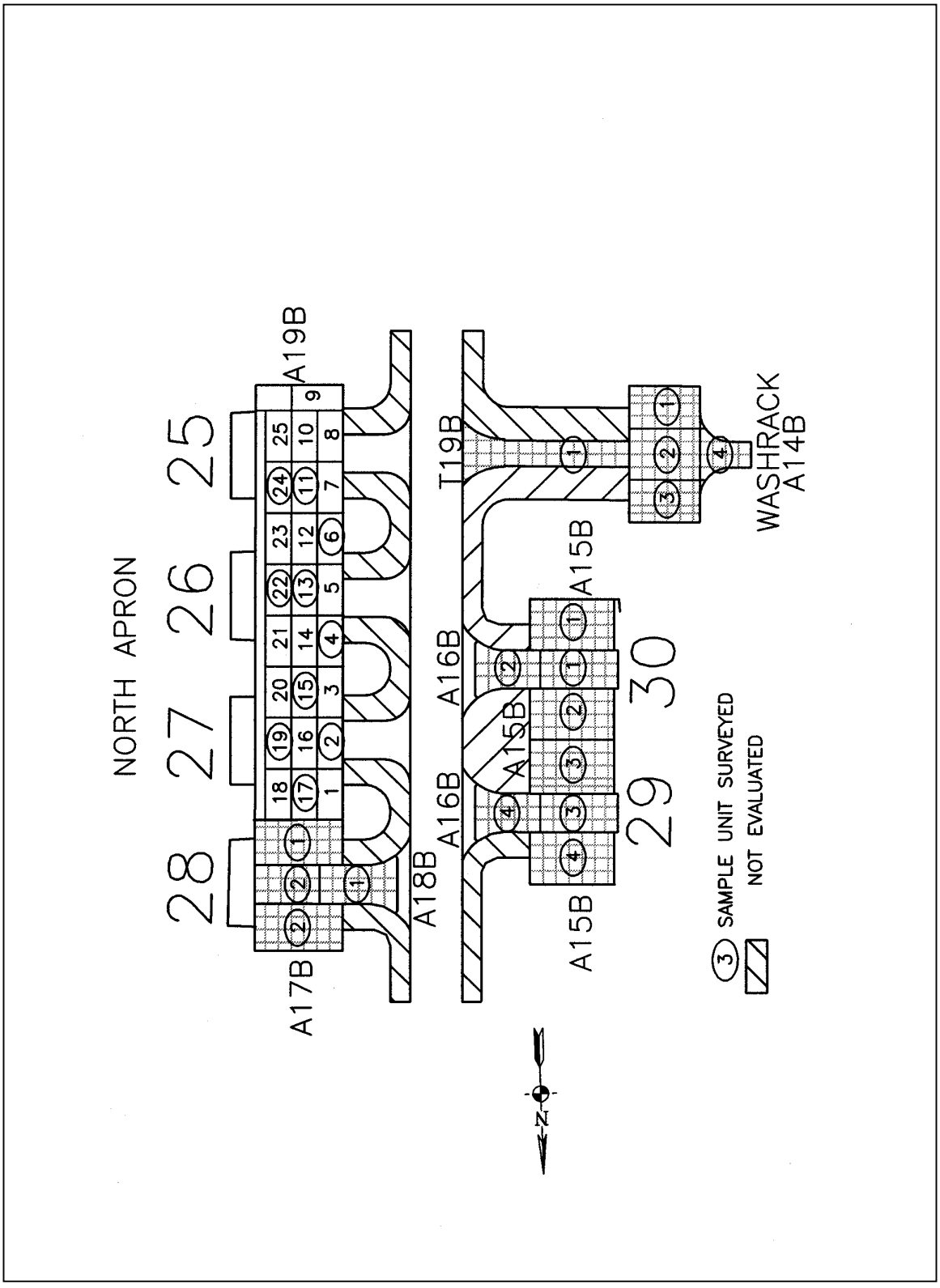


Figure C14. Sample unit layout, North Apron and Washrack (A14B, A15B, A16B, A15B, A18B, A19B, and T19B)

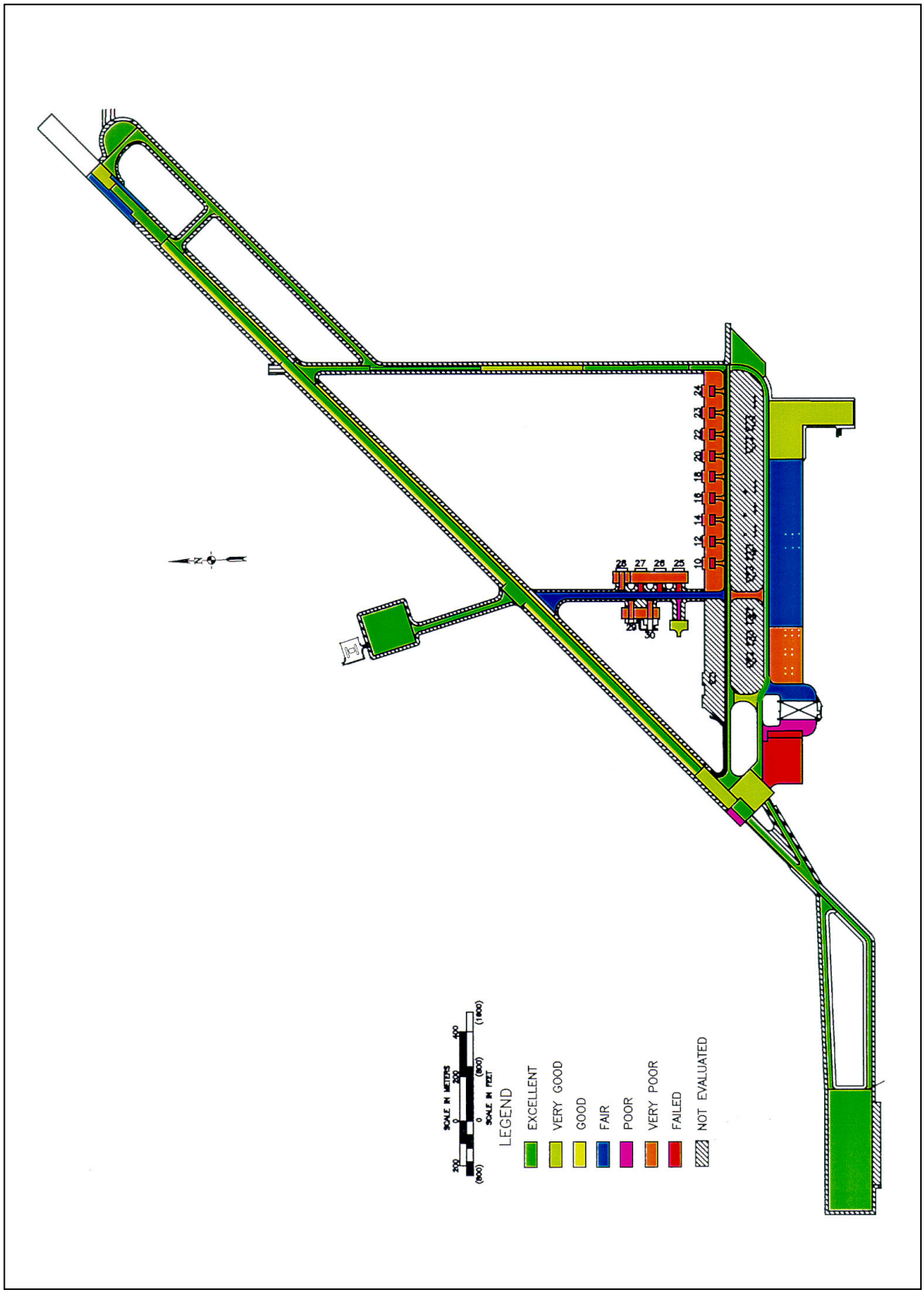


Figure C15. Pavement condition rating summary

Table C1
Comparison of 1989, 1992, and 2002 PCI Surveys

Feature	1989 PCI	1992 PCI	2002 PCI	2002 Rating	Change in PCI From 1992 to 2002 (+ or -)	Pavement Type
Runways						
R1A	24	19	93 [1]	Excellent	+74	PCC
R2A	51	18	26	Poor	+8	PCC
R3A	75	73	80	Excellent	+7	PCC
R4C	77	74	87	Excellent	+13	PCC
R5C	--[2]	--[2]	70	Good	--	AC
R6C	--[2]	--[2]	70	Good	--	AC
R7C	--[2]	--[2]	69	Good	--	AC
R8A	13	12	97 [1]	Excellent	+85	PCC
R9A	34	32	47	Fair	+15	PCC
R10A	40	42	75	Very Good	+32	PCC
R11A	--	--	100 [1]	Excellent	--	PCC
Taxiways						
T1A	--	--	100 [1]	Excellent	--	PCC
T2A	--	--	100 [1]	Excellent	--	PCC
T3A	--	--	100 [1]	Excellent	--	PCC
T4A	76	75	89	Excellent	+14	PCC
T5A	78	77	91	Excellent	+14	PCC
T6A	--	--	99 [1]	Excellent	--	PCC
T7B	67	41	76	Very Good	+35	PCC
T8B	21	21	22	Poor	+1	AC
T9B	21	21	45	Fair	+24	AC
T10B	--	--	100 [1]	Excellent	--	PCC
T11A	91	87	86	Excellent	-1	PCC
T12A	44	49	99 [1]	Excellent	+50	PCC
T13A	54	56	75	Very Good	+19	PCC
T14A	90	93	92	Excellent	-1	PCC
T15A	--	--	100 [1]	Excellent	--	PCC
T16A	64	46	100 [1]	Excellent	+54	PCC
T17A	29	14	98 [1]	Excellent	+86	PCC
T18C	--	--	100 [1]	Excellent	--	PCC
T19B	56	59	40	Very Poor	-19	PCC
T20B	21	21	0	Failed	-21	AC
Aprons						
A1B	--	--	100 [1]	Excellent	--	PCC
A2B	69	74	84	Very Good	+10	PCC
A3B	--	10	10	Failed	0	PCC

(Continued

[1] Constructed or reconstructed after 1992 survey.
[2] Not surveyed prior to 2002.

Table C1 (Concluded)

Feature	1989 PCI	1992 PCI	2002 PCI	2002 Rating	Change in PCI From 1992 to 2002 (+ or -)	Pavement Type
A4B	8	11	3	Failed	-8	PCC
A5B	43	38	37	Very Poor	-1	PCC
A6B	33	34	42	Fair	+8	PCC
A7B	46	46	17	Very Poor	-29	AC
A8B	26	21	42	Fair	+21	AC
A9B	69	60	74	Very Good	+14	PCC
A10B	--	--	100 [1]	Excellent	--	PCC
A11B	--[2]	--[2]	8	Failed	+4	PCC
A12B	--[2]	--[2]	20	Very Poor	--	AC
A13B	--[2]	--[2]	25	Very Poor	--	AC
A14B	77	83	76	Very Good	-7	PCC
A15B	25	22	11	Very Poor	-11	PCC
A16B	7	7	16	Very Poor	+9	PCC
A17B	17	10	23	Very Poor	+13	PCC
A18B	24	21	19	Very Poor	-2	PCC
A19B	21	21	23	Very Poor	+2	PCC
A20B	--	--	98 [1]	Excellent	--	AC
A21B	--	--	100 [1]	Excellent	--	PCC

[1] Constructed or reconstructed after 1992 survey.
[2] Not surveyed prior to 2002.

Photo C1. Runway 3-21, Feature R4C, low-severity small patch

Photo C2. Runway 3-21, Feature R6C, medium-severity longitudinal crack

Photo C3. Taxiway A, Feature T4A, high-severity corner spall

Photo C4. Taxiway B, Feature T5A, low-severity large patch and widening T6A

Photo C5. North Apron Hardstand Taxiway, Feature T20B, high-severity block cracking

Photo C6. Hangar Apron, Feature A4B, high-severity longitudinal crack

Photo C7. Hangar Apron, Feature A5B, high-severity small patch

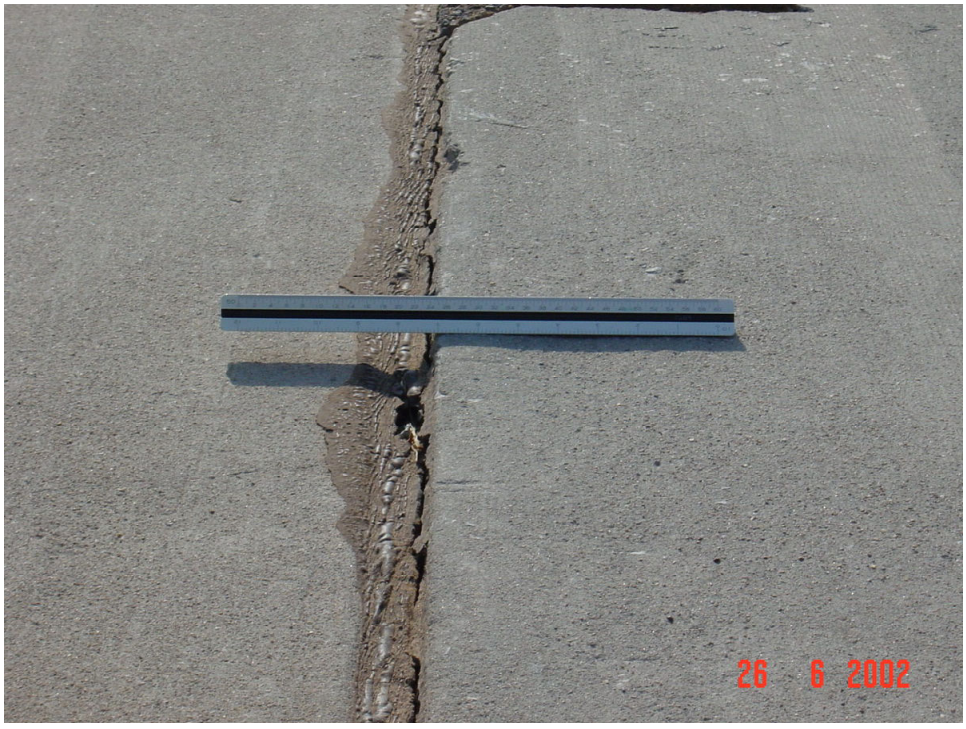


Photo C8. North Apron, Feature A15B, high-severity settlement

Photo C9. North Apron, Feature A17B, medium-severity shattered slab

Photo C10. North Apron, Feature A19B, high-severity block cracking

Appendix D
Structural Analyses

General

The performance of the airfield pavement facilities was analyzed for either the mixture of traffic shown in Table A4 or for specific aircraft traffic based on usage.

The mixture of aircraft traffic listed in Table A4 was converted to equivalent traffic of the critical aircraft based on the procedure outlined in TM 5-825-2/ DM 21.3/AFM 88-6, Chapter 2 (Headquarters, Departments of the Army, the Air Force, and the Navy 1978). The critical aircraft is defined as that aircraft within a mixture of various aircraft operating at a facility that will impose a more severe combination of gear load and tire pressure than the other assigned aircraft at their respective pass levels. For the projected aircraft traffic mixture, the critical aircraft within the mixture was determined and the number of passes of the critical aircraft required to produce an effect on the pavement equivalent to the total mixture of traffic was computed. The current Corps of Engineers (CE) design criteria is utilized to analyze and equate the various aircraft loadings. PCC and AC pavements have different design criteria and, thus, a different number of equivalent operations of the design aircraft. The critical aircraft operating on the PCC and AC pavements was determined to be the B-727 and B-747 aircraft, respectively. Table D1 presents the critical aircraft computation results for the airfield.

The operational ACN values determined for the critical aircraft (95 Mg (210-kip) B-727 aircraft and 362 Mg (798-kip) B-747 are shown in Table D2 for the four subgrade strength categories.

In a wartime scenario, aircraft may be required to operate at weights that exceed normal peacetime loads. These aircraft would have a higher ACN, would cause more damage, and reduce the life of the pavement. A mobilization ACN can be determined from the appropriate ACN-PCN curve presented in ETL 1110-3-394 (Headquarters, Department of the Army 1991). Typical ACN-PCN curves for the B-727, B-747, C-130, C-141, C-141 and C-5A are shown in Figures D1 through D6, respectively. For contingency planning, it is often necessary to determine the largest aircraft that can safely land on an airfield. Runway length is a critical factor in this determination. Minimum take-off distances for

maximum take-off weights of aircraft are also given in ETL 1110-3-394 (Headquarters, Department of the Army 1991). For a specified aircraft, the ACN can be determined from the ACN-PCN curve and then the effect of the higher loads on the airfield can be determined from the ACN/PCN ratio. Specific aircraft mobilization traffic requirements are contained in classified mobilization plans and are not included in this report.

ACN-PCN Method of Reporting Pavement Structural Condition

The ACN-PCN method is structured so that the structural evaluation of a pavement for a particular aircraft can be accomplished by using the ratio of the aircraft ACN to the pavement PCN. For a given pavement life and a given number of operations of a particular aircraft, there is a relationship between the ACN/PCN ratio and the percent of pavement life used by the applied traffic. For a given ACN/PCN ratio, a relationship exists for the number of operations that will produce failure of the pavement. These relationships provide a method for evaluating a pavement for allowable load depending on an acceptable degree of damage to the pavement or an allowable number of operations of a particular aircraft to cause failure of a pavement. For aircraft having an ACN equal to the PCN, the predicted failure of the pavement would equal the design life of the pavement. Aircraft having ACNs higher than the pavement PCN would overload the pavement and decrease the life of the pavement. Likewise if the ACN of the operational aircraft were less than the pavement PCN, the life of the pavement would be greater than the design life. If the operational ACN is greater than the pavement PCN and a decrease in pavement life is not acceptable, then structural improvement of the pavement is required to bring the pavement PCN up to or greater than the operational ACN.

PCN Analysis

Modulus values shown in Appendix B were input into the computerized Layered Elastic Evaluation Program (LEEP) to determine the load-carrying capacity of each pavement feature in accordance with UFC 3-260-03 (Headquarters, Departments of the Army, Navy, and the Air Force 2001a). Using the design aircraft and traffic levels for normal operations, a PCN was determined for each pavement feature. The PCN is determined using the allowable gross aircraft load and the subgrade strength category. To determine the subgrade category, back-calculated subgrade moduli were converted to CBR values using the correlation $E = 1500\ (CBR)$. Table D3 presents a summary of the evaluation of each pavement feature in terms of allowable gross aircraft loadings, PCN, and overlay thicknesses required to increase the structural capacity such that the mission traffic can be supported (PCN ≥ operational ACN). The Airfield Pavement Evaluation Chart (APEC) presented in Illustration 1 shows a layout of the airfield pavements and corresponding PCN for each facility.

The PCN codes and PCI for each feature were analyzed to establish ISR ratings listed in Table 3-1. An ISR Rating for each pavement facility is shown in Illustration 2. AR 420-72 (Headquarters Department of the Army 2000) requires that the following ACN/PCN ratios be used in determining ISR ratings for airfield pavement facilities.

ACN/PCN ≤ 1.0 equals an ISR Green rating
1.0 < ACN/PCN ≤ 1.5 equals an ISR Amber rating
ACN/PCN > 1.5 equals an ISR Red rating

For those features having a PCN< the required operational ACN, the additional pavement thickness (overlay) needed to support the mission traffic was computed. Although the required increase in pavement strength is presented as an overlay thickness, several other approaches could be considered. A detailed analysis will be required to select and design the most cost-effective repair or improvement alternative. It should be noted that although less than 102 mm (4-in.) -thick AC overlay requirements are indicated in Table D3, the following minimum thicknesses are recommended in UFC 3-260-2 (Headquarters, Departments of the Army, Navy, and the Air Force 2001b):

a. 51 mm (2-in.) -thick minimum AC overlay over AC pavements.

b. 102 mm (4-in.) -thick minimum AC overlay over PCC pavements.

c. 152 mm (6-in.) -thick minimum PCC partially or nonbonded overlay.

d. 51 mm (2-in.) -thick minimum PCC fully bonded overlay over PCC pavements.

These minimum overlay requirements are required to control the degree of cracking which will occur in the base pavement (existing pavement) due to the application of the design traffic. If those features needing structural improvements are not upgraded in a timely manner pavement may deteriorate rapidly and result in damage to all pavement layers and an increase in cost for the necessary improvements. Excessive damage may also result in lengthy closures of the pavement facility.

The PCN codes for the weakest feature within each pavement facility are shown in Table D4. The PCN code includes the PCN numerical value, pavement type, subgrade category, allowable tire pressure, and method used to determine the PCN. An example of a PCN code is: 30/F/A/W/T, with 30 expressing the numerical PCN value, F indicating a flexible pavement, A indicating high strength subgrade, W indicating high-allowable tire pressure, and T indicating that the PCN value was obtained by a technical evaluation. Table D5 presents a description of the letter codes comprising the PCN code. Each PCN assumes that only the design aircraft will be used for the stated number of passes. Theoretically, if the PCN is equal to the ACN, the pavement should perform satisfactorily and require only routine maintenance through the length of the analysis period. There may be situations when it is necessary to overload a pavement, i.e., the ACN is greater than the PCN. Examples are emergency landings, short-term

contingencies, exercises, and air shows. Pavements can usually support some overload; however, pavement life can be reduced. If the PCN were less than the ACN, the ACN/PCN ratio would be greater than 1 and the pavement would be expected to fail before reaching the end of the analysis period. As a general rule, ACN/PCN ratios of up to 1.25 have minimal impact on pavement life. If the ACN/PCN ratio is between 1.25 and 1.50, aircraft operations should be limited to 10 passes and the pavement inspected after each operation. Aircraft operations resulting in an ACN/PCN ratio over 1.50 should not be allowed except for emergencies. An example of how to use the ACP/PCN method to determine if an aircraft will overload a pavement is shown below.

Example Problem

Runway 03-21, Taxiways B, F, K, and the Hot Cargo Ramp must be used for 1,000 passes of a C-17 aircraft operating at a take-off weight of 263 300 kg (580,000 lb). Find the weakest features on each facility and determine if they can support this traffic?

Solution

From Table D3, determine the weakest feature on R/W 03-21, Taxiway B, F, and K, and the Hot Cargo Ramp; from Figure D3 determine the ACN of a 263 300 kg (580,000 lb) C-17, and then calculate the ACN/PCN ratio using the appropriate PCN from Table D3.

a. Runway 03-21.

Weakest feature is R10A (see Table D3)
PCN for R10A = 91/R/C/W/T
ACN for a 263 300 kg (580,000 lb) C-17 on a low strength subgrade = 54/R/C/W/T (see Figure D4).
ACN/PCN ratio is 54/91 or 0.59; therefore R10A should perform satisfactorily.

b. Taxiway B.

Weakest feature is T75 (see Table D3)
PCN for T5A = 120/R/C/W/T
ACN for a C-17 on a low strength subgrade = 54/R/C/W/T (see Figure D4).
ACN/PCN ratio is 54/120 or 0.45; therefore T5A should perform satisfactorily.

c. Taxiway F (T9B).

PCN for T9B = 38/F/A/W/T
ACN for a C-17 on a high strength subgrade = 49/F/A/W/T (see Figure D4).
ACN/PCN ratio is 49/38 or 1.29; therefore T9B should be limited to 10 passes of the C-17 traffic and the pavement inspected after each operation.

d. Taxiway K (T10B).

PCN for T10B = 58/R/B/W/T
ACN for a C-17 on a medium strength subgrade = 49/R/B/W/T (see Figure D4).
ACN/PCN ratio is 49/58 or 0.84; therefore T10B should perform satisfactorily.

e. Hot Cargo Apron.

PCN for A20B = 54/R/C/W/T
ACN for a C-17 on a low strength subgrade = 54/R/C/W/T (see Figure D4).
ACN/PCN ratio is 54/54 or 1.00; therefore A20B should perform satisfactorily.

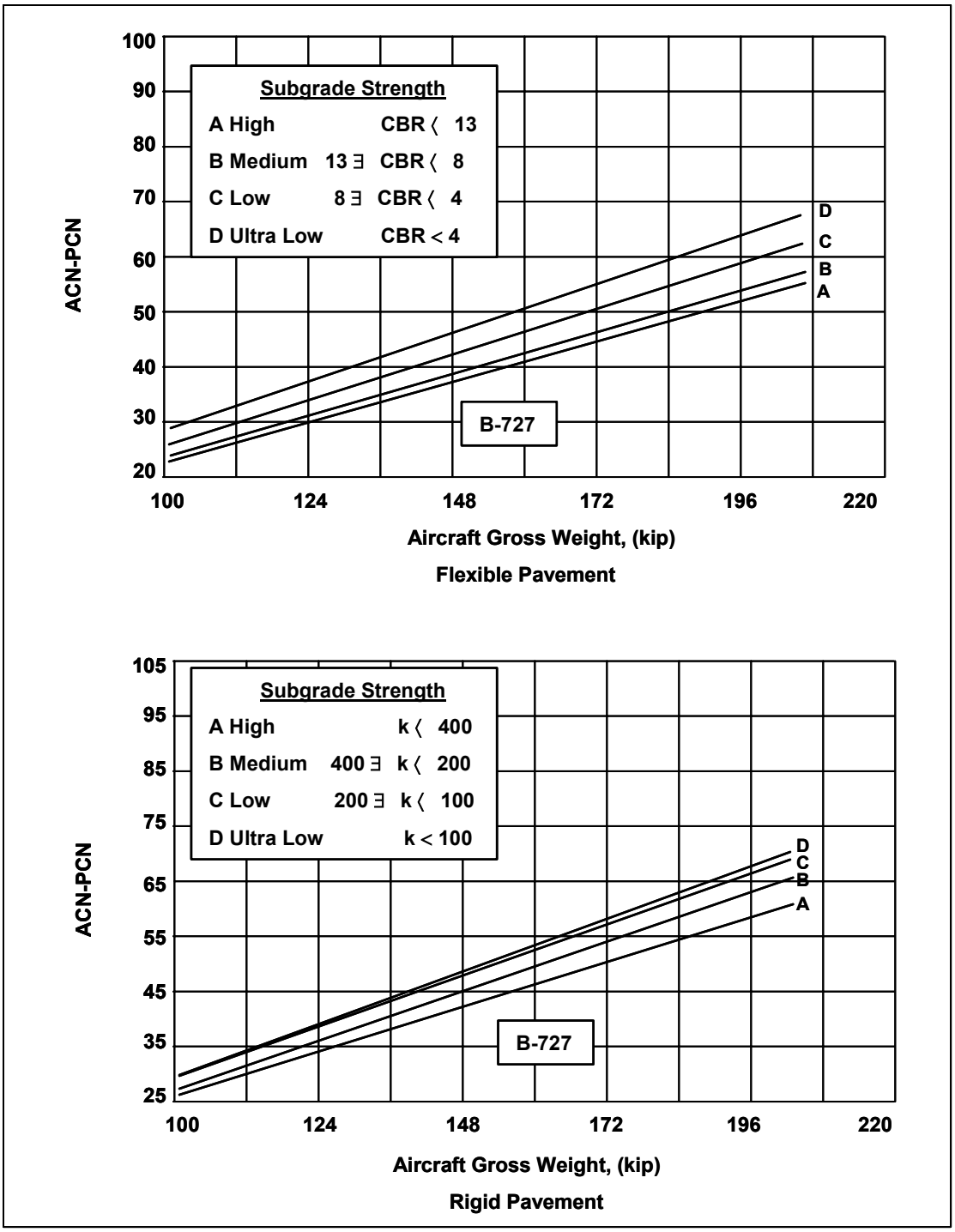


Figure D1. ACN-PCN curve for a B-727

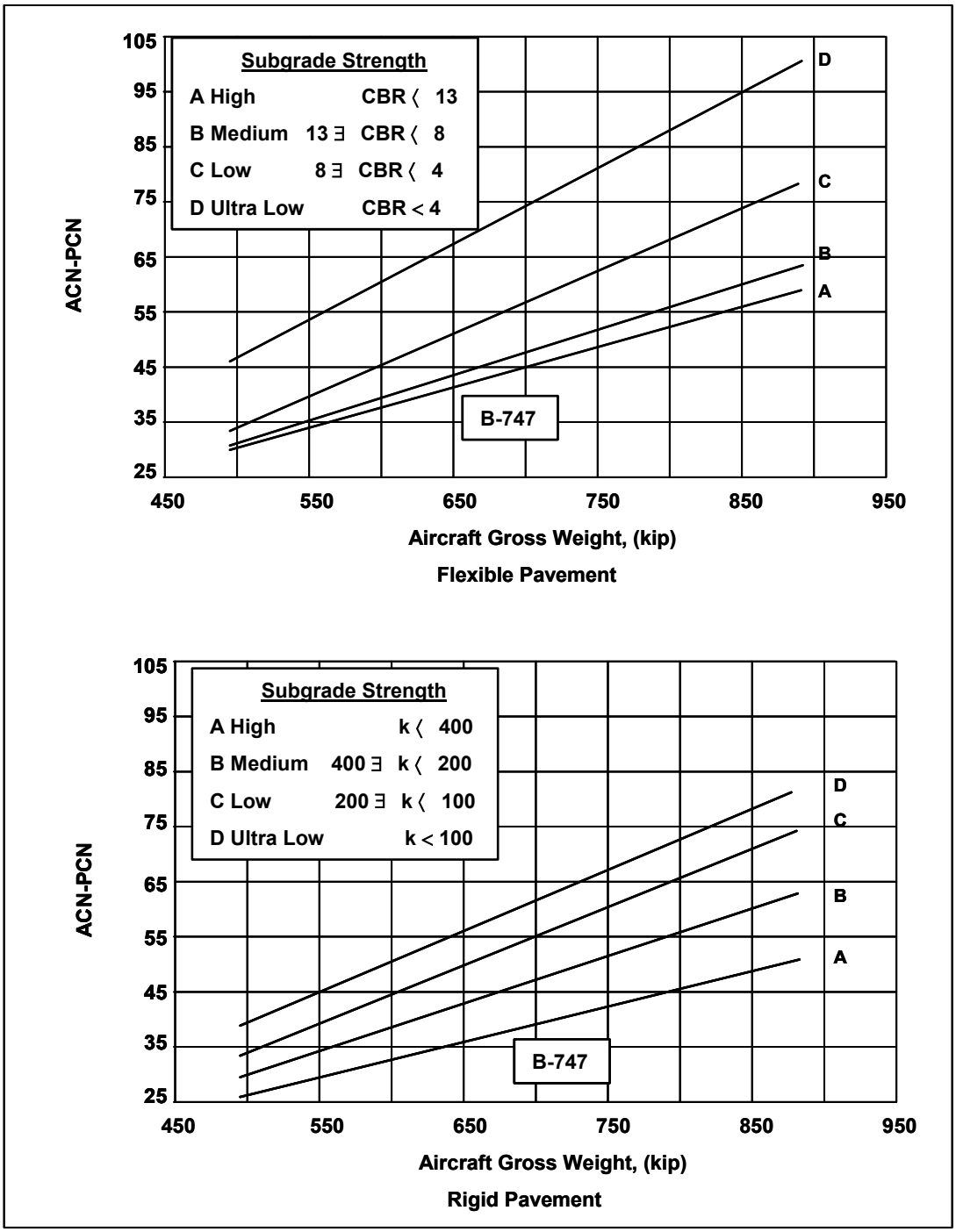


Figure D2. ACN-PCN curve for a B-747

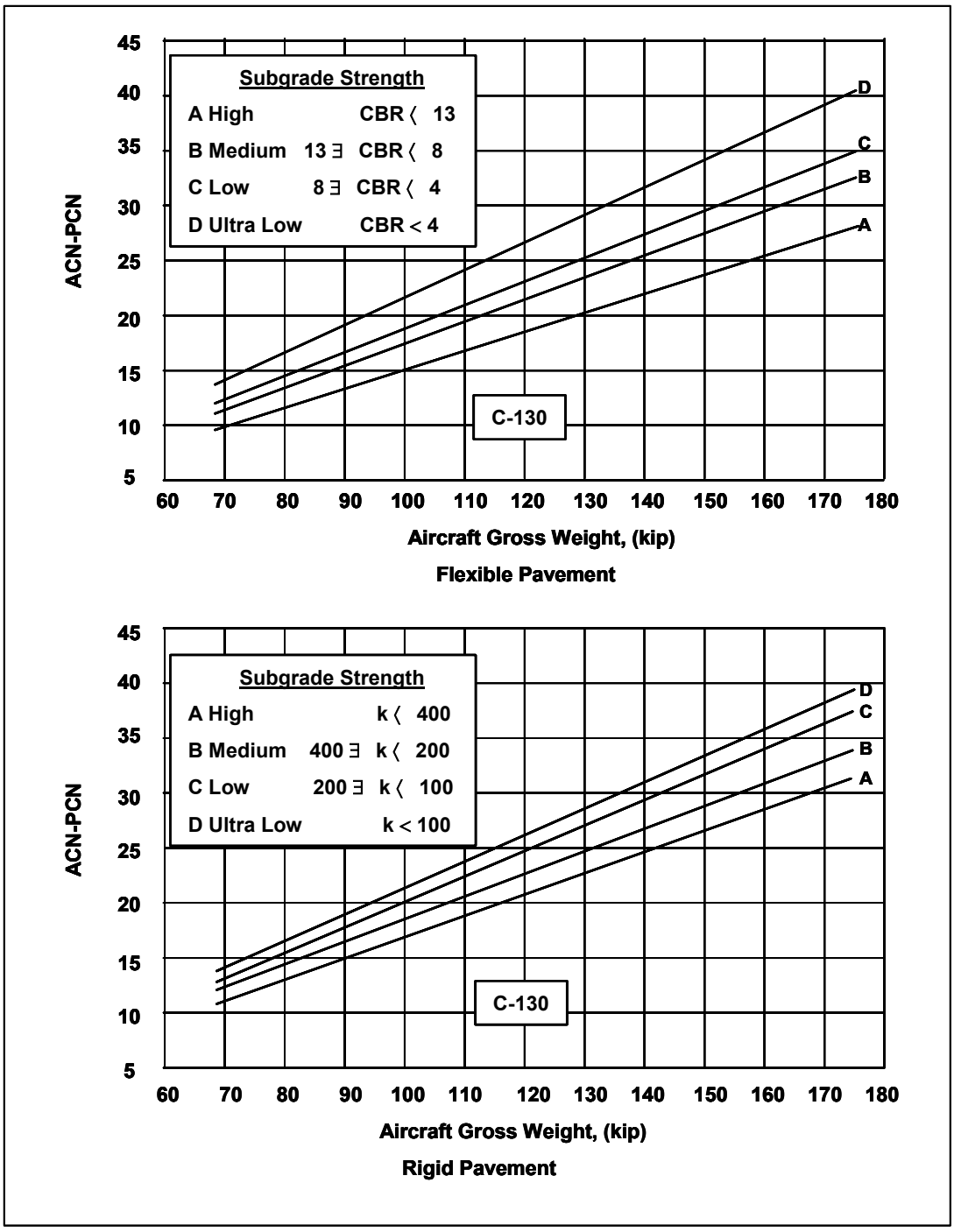


Figure D3. ACN-PCN curve for a C-130

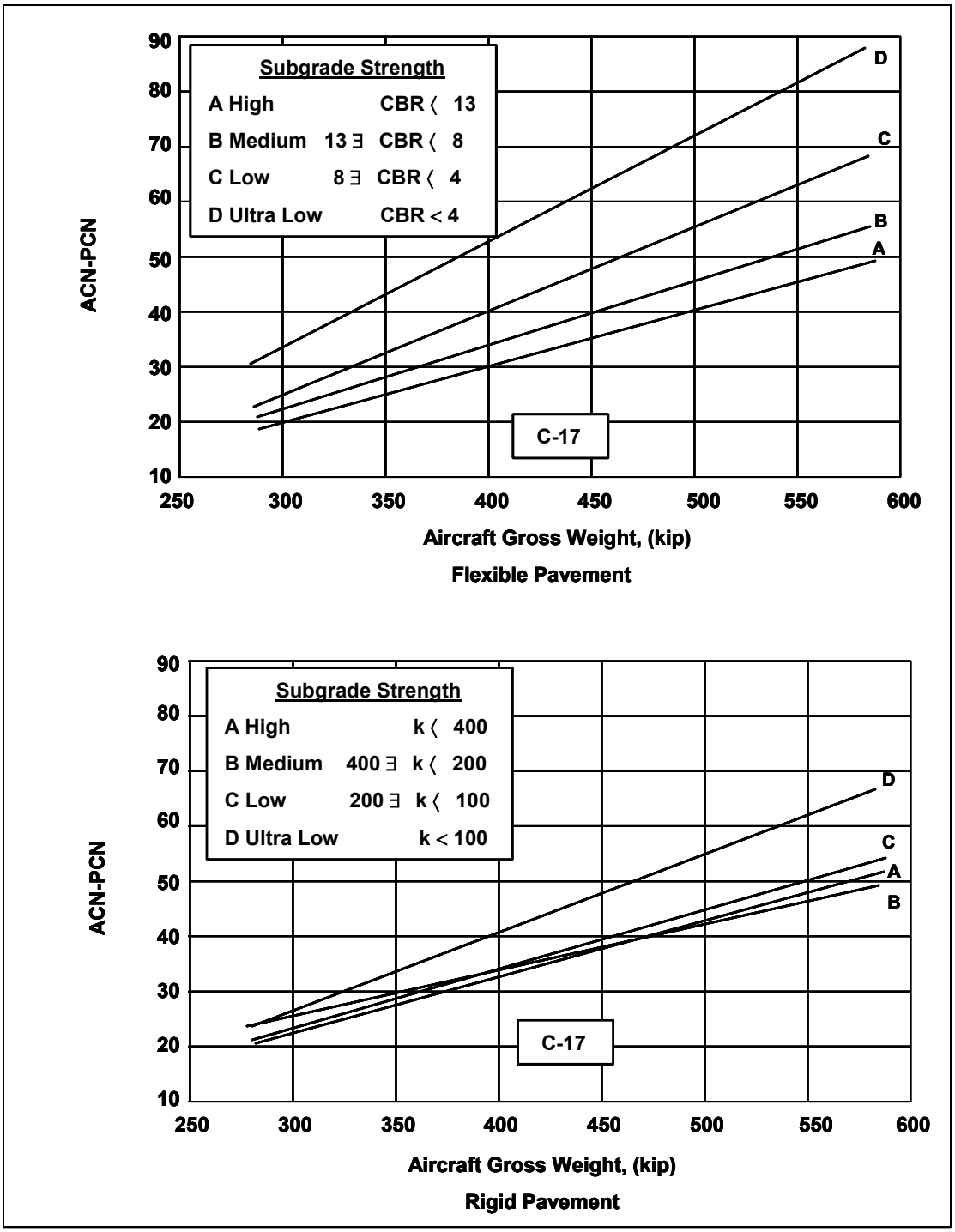


Figure D4. ACN-PCN curve for a C-17 aircraft

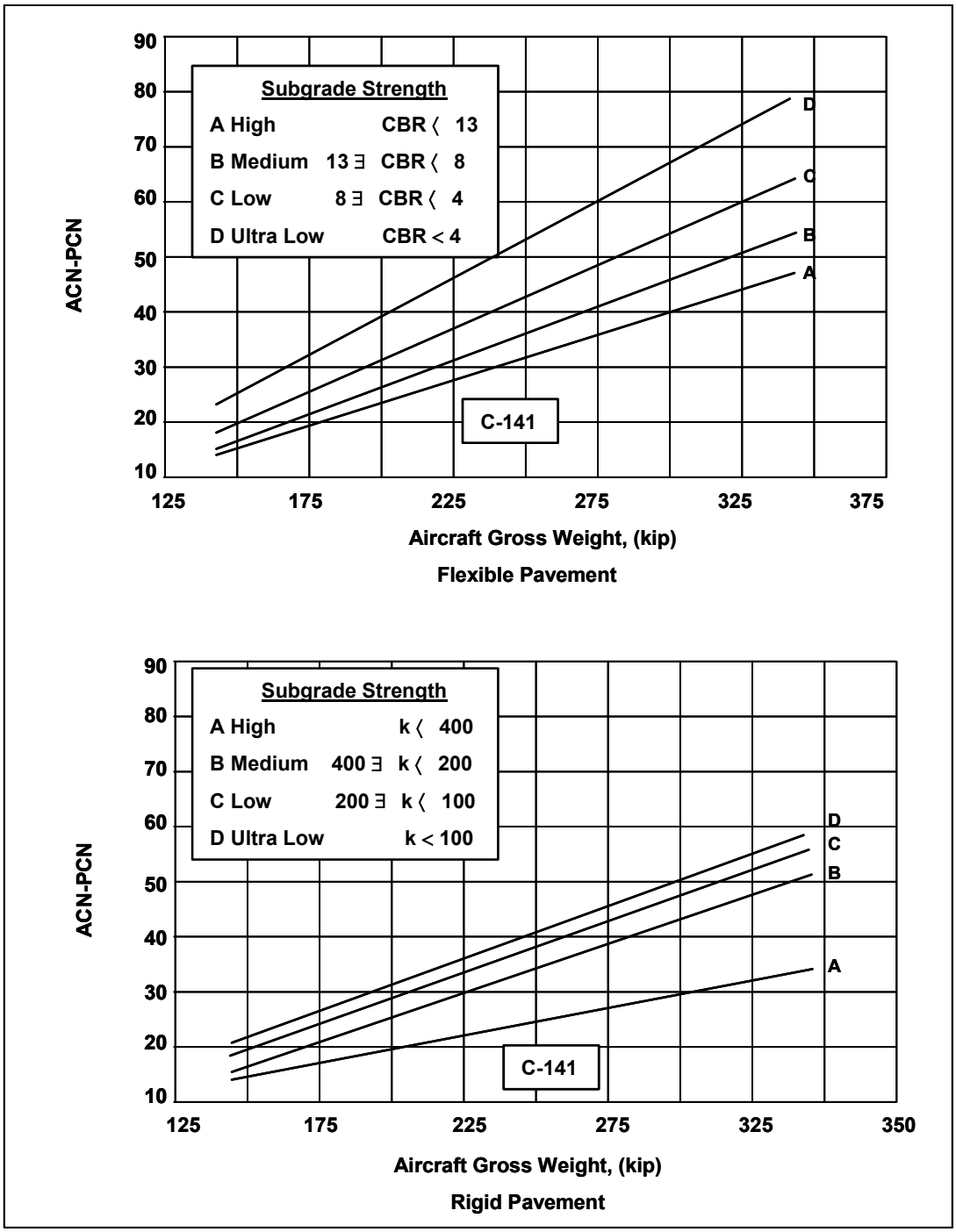


Figure D5. ACN-PCN curve for a C-141

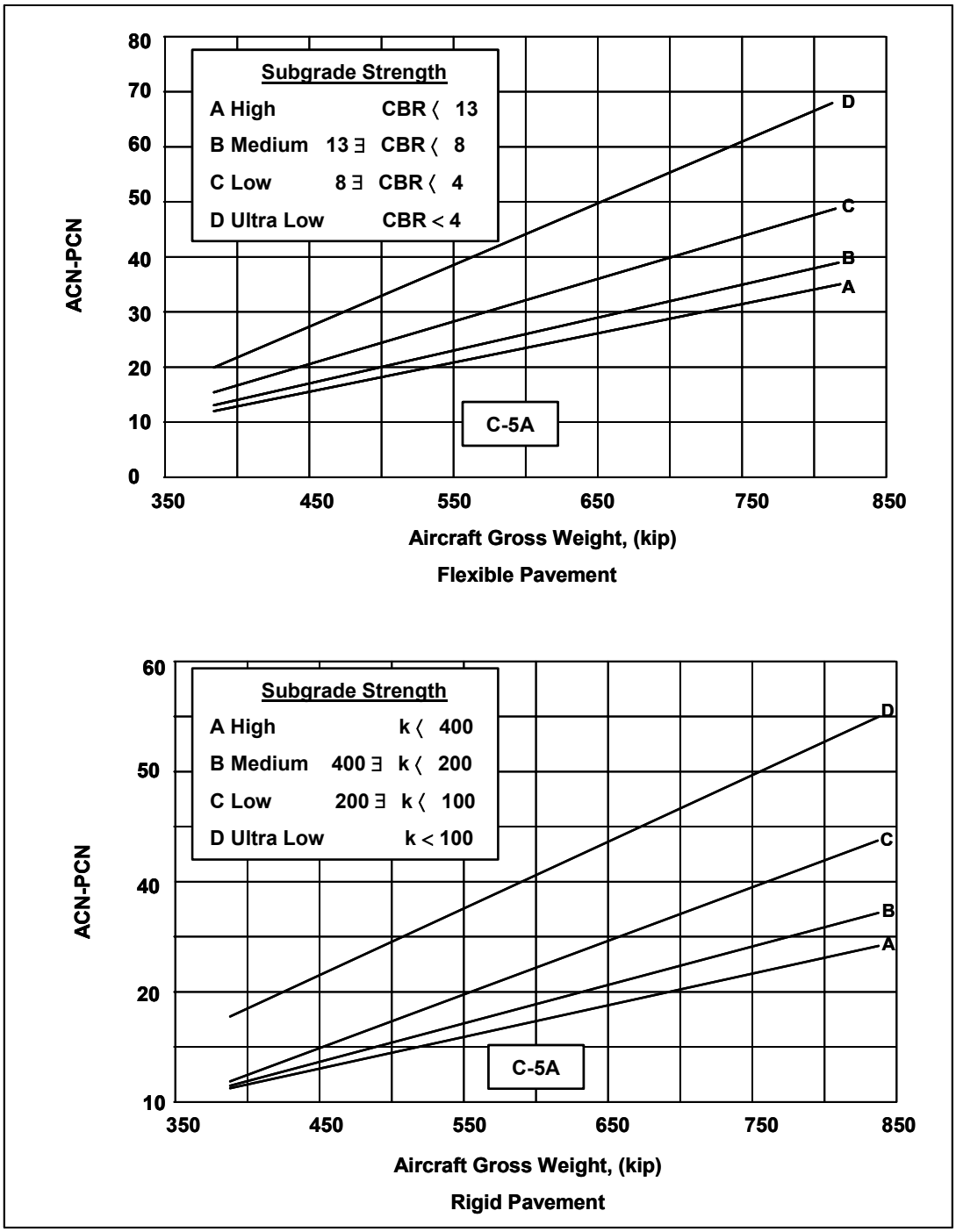


Figure D6. ACN-PCN curve for a C-5A

Table D1
Determination of Critical Aircraft and Design Traffic

PCC Pavements			
Fixed-Wing Aircraft	**Gross Weight kg (lb)**	**20-year Projected Aircraft Passes**	**20-year Equivalent B-727 Passes**
AN-124	392 351 (864,210)	160	1
C-130	70 300 (155,000)	4,800	5
C-17	263 320 (580,000)	84,022	401
C-141	146 642 (323,000)	84,022	1,123
C-5A	349 126 (769,000)	84,022	103
B-727	95 113 (209,500)	84,022	84,022
B-747	362 292 (798,000)	84,022	2,364
B-757	116 224 (256,000)	84,022	79
KC-135	136 926 (301,600)	84,022	92
KC-10	267 860 (590,000)	84,022	4
20-year Total Equivalent B-727 passes @ 95 113 (209,500) = 88,194			
AC Pavements			
Fixed-Wing Aircraft	**Gross Weight kg (lb)**	**20-year Projected Aircraft Passes**	**20-year Equivalent B-747 Passes**
AN-124	392 351 (864,210)	160	499
C-130	70 300 (155,000)	4,800	1
C-17	263 320 (580,000)	84,022	4,335
C-141	146 642 (323,000)	84,022	11,677
C-5A	349 126 (769,000)	84,022	1
B-727	95 113 (209,500)	84,022	18,679
B-747	362 292 (798,000)	84,022	84,022
B-757	116 224 (256,000)	84,022	754
KC-135	136 926 (301,600)	84,022	2,549
KC-10	267 860 (590,000)	84,022	48,971
20-year Total Equivalent B-747 passes @ 362 292 (798,000)= 171,488			

Table D2
Determination of ACN Values for the Critical Aircraft

AC Pavements			
Design Aircraft	**Weight kg (lb)**	**Subgrade Category[1]**	**ACN or Required PCN**
B-747	362 292 (798,000)	A B C D	52 57 70 91
PCC Pavements			
Design Aircraft	**Weight kg (lb)**	**Subgrade Category[1]**	**ACN or Required PCN**
B-727	95 113 (209,500)	A B C D	61 65 68 69

[1] See Table D5 for subgrade category.

Table D3
Allowable Gross Aircraft Loads and Overlay Requirements for the Projected Day-To-Day Traffic

Pavement Facility	Feature	Test Number or Station m (ft)	Type Traffic Area	Subgrade Strength[1] CBR, % or K, kPa/mm (psi/in.)	Design Aircraft[2]				Allowable Gross Load Mg (kips)	PCN	Theoretical Overlay Requirements, mm (in.)		
					Aircraft	Weight Kg (lb)	Passes	ACN			AC	PCC Partial Bond	PCC No Bond
Runway 3-21	R1A	0+00-0+91 (0+00-3+00)	A	73 (269)	B-727	95 113 (209,500)	88,194	65/R/B/W/T	95 (209+)[3]	98/R/B/W/T	0 (0.0)	0 (0.0)	0 (0.0)
	R3A	0+91-3+05 (3+00-10+00)	A	62 (230)	B-727	95 113 (209,500)	88,194	65/R/B/W/T	95 (209+)[3]	110/R/B/W/T	0 (0.0)	0 (0.0)	0 (0.0)
	R4C	3+05-36+80 (10+00-120+75)	C	52 (191)	B-727	95 113 (209,500)	88,194	68/R/C/W/T	95 (209+)[3]	120/R/C/W/T	0 (0.0)	0 (0.0)	0 (0.0)
	R8A	36+80-40+17 (120+75-131+80)	A	66 (245)	B-727	95 113 (209,500)	88,194	65/R/B/W/T	95 (209+)[3]	94/R/B/W/T	0 (0.0)	0 (0.0)	0 (0.0)
	R10A	40+17-41+30 (131+80-135+50)	A	38 (142)	B-727	95 113 (209,500)	88,194	68/R/C/W/T	95 (209+)[3]	91/R/C/W/T	0 (0.0)	0 (0.0)	0 (0.0)
Taxiway H	T1A	0+00-14+47 (0+00-47+47)	A	50 (186)	B-727	95 113 (209,500)	88,194	68/R/C/W/T	95 (209+)[3]	92/R/C/W/T	0 (0.0)	0 (0.0)	0 (0.0)
Taxiway J	T2A	0+00-9+01 (0+00-29+56)	A	69 (254)	B-727	95 113 (209,500)	88,194	65/R/B/W/T	95 (205)	65/R/B/W/T	0 (0.0)	0 (0.0)	0 (0.0)
Taxiway I	T3A	0+00-4+19 (0+00-13+75)	A	52 (193)	B-727	95 113 (209,500)	88,194	65/R/B/W/T	95 (209+)[3]	86/R/B/W/T	0 (0.0)	0 (0.0)	0 (0.0)
Taxiway A	T4A	0+00-19+20 (0+00-63+00)	A	63 (234)	B-727	95 113 (209,500)	88,194	65/R/B/W/T	95 (209+)[3]	110/R/B/W/T	0 (0.0)	0 (0.0)	0 (0.0)
Taxiway B	T5A &T6A	0+00-19+62 (0+00-64+38)	A	44 (164)	B-727	95 113 (209,500)	88,194	68/R/C/W/T	95 (209+)[3]	120/R/C/W/T	0 (0.0)	0 (0.0)	0 (0.0)
Taxiway G	T7B	0+00-1+05 (0+00-3+50)	B	64 (211)	B-727	95 113 (209,500)	88,194	65/R/B/W/T	95 (209+)[3]	102/R/B/W/T	0 (0.0)	0 (0.0)	0 (0.0)
Taxiway F	T8B	0+00-1+52 (0+00-5+00)	B	22	B-747	362 292 (798,000)	171,488	52/F/A/W/T	294 (647)	40/F/A/W/T	48 (1.9)	NA[4]	--[4]
	T9B	0+00-8+80 (0+00-28+88)	B	18	B-747	362 292 (798,000)	171,488	52/F/A/W/T	283 (623)	38/F/A/W/T	(2.3)	NA[4]	--[4]
Taxiway K	T10B	0+00-4+65 (0+00-15+25)	B	61 (226)	B-727	95 113 (209,500)	88,194	65/R/B/W/T	85 (188)	58/R/B/W/T	0 (0.0)	76 (3.0)	147 (5.8)

(Sheet 1 of 3)

[1] Values based on correlations between CBR and/or k and the backcalculated subgrade modulus.
[2] Determined for the critical aircraft (see Table D1).
[3] The allowable gross load is greater than the maximum take-off weight of the critical aircraft.
[4] Was not calculated because feature was evaluated as a flexible pavement.

Table D3 (Continued)

Pavement Facility	Feature	Test Number or Station m (ft)	Type Traffic Area	Subgrade Strength[1] CBR, % or K, kPa/mm (psi/in.)	Design Aircraft[2]				Allowable Gross Load Mg (kips)	PCN	Theoretical Overlay Requirements, mm (in.)		
					Aircraft	Weight Kg (lb)	Passes	ACN			AC	PCC Partial Bond	PCC No Bond
Taxiway C	T11A	0+00-1+68 (0+00-5+50)	A	44 (162)	B-727	95 113 (209,500)	88,194	68/R/C/W/T	95 (209+)[3]	120/R/C/W/T	0 (0.0)	0 (0.0)	0 (0.0)
	T12A	1+68-6+42 (5+50-21+06)	A	54 (201)	B-727	95 113 (209,500)	88,194	65/R/B/W/T	95 (209+)[3]	91/R/B/W/T	0 (0.0)	0 (0.0)	0 (0.0)
	T13A	6+42-10+99 (21+06-36+06)	A	56 (207)	B-727	95 113 (209,500)	88,194	65/R/B/W/T	95 (209+)[3]	94/R/B/W/T	0 (0.0)	0 (0.0)	0 (0.0)
	T14A& T15A	10+99-15+94 (36+06-52+31)	A	65 (239)	B-727	95 113 (209,500)	88,194	65/R/B/W/T	95 (209+)[3]	110/R/B/W/T	0 (0.0)	0 (0.0)	0 (0.0)
	T16A	15+94-19+16 (52+31-62+87)	A	55 (204)	B-727	95 113 (209,500)	88,194	65/R/B/W/T	95 (209+)[3]	91/R/B/W/T	0 (0.0)	0 (0.0)	0 (0.0)
Taxiway D	T17A	0+00-16+34 (0+00-53+60)	A	56 (206)	B-727	95 113 (209,500)	88,194	65/R/B/W/T	95 (209+)[3]	91/R/B/W/T	0 (0.0)	0 (0.0)	0 (0.0)
Taxiway E	T18C	0+00-2+35 (0+00-7+70)	C	54 (200)	B-727	95 113 (209,500)	88,194	65/R//W/T	95 (209+)[3]	110/R/B/W/T	0 (0.0)	0 (0.0)	0 (0.0)
North Ramp Washrack Taxiway	T19B	0+00-0+91 (0+00-3+00)	B	25 (92)	B-727	95 113 (209,500)	88,194	69/R/D/W/T	69 (153)	49/R/D/W/T	0 (0.0)	84 (3.3)	157 (6.2)
North Ramp Hardstand Taxiway	T20B	1-3	B	16	B-747	362 292 (798,000)	171,488	52/F/A/W/T	203 (448)	24/F/A/W/T	124 (4.9)	NA[4]	--[4]
DAACG Ramp	A1B	1-20	B	61 (226)	B-727	95 113 (209,500)	88,194	65/R/B/W/T	95 (209+)[3]	68/R/B/W/T	0 (0.0)	0 (0.0)	0 (0.0)
Southwest Warm-up Apron	A2B	1-4	B	58 (215)	B-727	95 113 (209,500)	88,194	65/R/B/W/T	95 (209+)[3]	110/R/B/W/T	0 (0.0)	0 (0.0)	0 (0.0)
West Apron Extension	A3B	1-5	B	46 (171)	B-727	95 113 (209,500)	88,194	68/R/C/W/T	23 (50)	21/R/C/W/T	457 (18.0)	295 (11.6)	358 (14.1)
Hangar Apron	A4B	1-4	B	53 (197)	B-727	95 113 (209,500)	88,194	68/R/C/W/T	15 (33)	19/R/C/W/T	556 (21.9)	356 (14.0)	437 (16.8)
	A5B	1-4	B	52 (191)	B-727	95 113 (209,500)	88,194	68/R/C/W/T	59 (131)	40/R/C/W/T	170 (6.7)	216 (8.5)	307 (12.1)
	A6B	1-7	B	50 (185)	B-727	95 113 (209,500)	88,194	68/R/C/W/T	79 (173)	55/R/C/W/T	0 (0.0)	104 (4.1)	180 (7.1)

(Sheet 2 of 3)

[1] Values based on correlations between CBR and/or k and the backcalculated subgrade modulus.
[2] Determined for the critical aircraft (see Table D1).
[3] The allowable gross load is greater than the maximum take-off weight of the critical aircraft.
[4] Was not calculated because feature was evaluated as a flexible pavement.

Table D3 (Concluded)

Pavement Facility	Feature	Test Number or Station m (ft)	Type Traffic Area	Subgrade Strength[1] CBR, % or K, kPa/mm (psi/in.)	Design Aircraft[2]				Allowable Gross Load Mg (kips)	PCN	Theoretical Overlay Requirements, mm (in.)		
					Aircraft	Weight Kg (lb)	Passes	ACN			AC	PCC Partial Bond	PCC No Bond
Operational Apron	A7B	1-13	B	11	B-747	362 292 (798,000)	171,488	57/F/B/W/T	122 (269)	10/F/B/W/T	333 (13.1)	NA[4]	--[4]
	A8B	1-26	B	12	B-747	362 292 (798,000)	171,488	57/F/B/W/T	322 (709)	32/F/B/W/T	117 (4.6)	NA[4]	--[4]
Heavy Ramp	A9B	1-38	B	54 (200)	B-727	95 113 (209,500)	88,194	65/R/B/W/T	65 (143)	42/R/B/W/T	104 (4.1)	173 (6.8)	257 (10.1)
T4D Apron	A10B	1-8	B	57 (210)	B-727	95 113 (209,500)	88,194	65/R/B/W/T	95 (209+)[3]	99/R/B/W/T	0 (0.0)	0 (0.0)	0 (0.0)
Hardstands 10-24	A11B	1-9	B	49 (181)	B-727	95 113 (209,500)	88,194	68/R/C/W/T	70 (154)	48/R/C/W/T	64 (2.5)	180 (7.1)	284 (11.2)
Hardstands 10-24	A12B	1-9	B	16	B-747	362 292 (798,000)	171,488	52/F/A/W/T	230 (507)	29/F/A/W/T	122 (4.8)	NA[4]	--[4]
East Parking Apron	A13B	1-6	B	13	B-747	362 292 (798,000)	171,488	52/F/A/W/T	84 (186)	4/F/A/W/T	343 (13.5)	NA[4]	--[4]
North Apron Washrack	A14B	1-3	B	44 (162)	B-727	95 113 (209,500)	88,194	68/R/C/W/T	60 (132)	40/R/C/W/T	709 (27.9)	406 (16.0)	450 (17.7)
North Parking Apron	A15B	1-3	B	30 (111)	B-727	95 113 (209,500)	88,194	68/R/C/W/T	41 (90)	25/R/C/W/T	859 (33.8)	419 (16.5)	455 (17.9)
	A16B	1-4	B	30 (169)	B-727	95 113 (209,500)	88,194	68/R/C/W/T	79 (173)	55/R/C/W/T	587 (23.1)	353 (13.9)	353 (15.3)
	A17B	1-4	B	28 (102)	B-727	95 113 (209,500)	88,194	68/R/C/W/T	40 (88)	24/R/C/W/T	615 (32.4)	414 (16.3)	455 (17.9)
	A18B	1-3	B	30 (169)	B-727	95 113 (209,500)	88,194	68/R/C/W/T	79 (173)	55/R/C/W/T	587 (23.1)	361 (14.2)	394 (15.5)
	A19B	1-4	B	13	B-747	362 292 (798,000)	171,488	57/F/B/W/T	80 (176)	1/F/B/W/T	353 (13.9)	NA[4]	--[4]
Hot Cargo Ramp	A20B	1-8	B	44 (164)	B-727	95 113 (209,500)	88,194	68/R/C/W/T	78 (172)	54/R/C/W/T	0 (0.0)	117 (4.6)	201 (7.9)
Southwest Warm-up Apron	A21B	1-14	B	63 (233)	B-727	95 113 (209,500)	88,194	65/R/B/W/T	95 (209+)[3]	97/R/B/W/T	0 (0.0)	0 (0.0)	0 (0.0)

(Sheet 3 of 3)

[1] Values based on correlations between CBR and/or k and the backcalculated subgrade modulus.

[2] Determined for the critical aircraft (see Table D1).

[3] The allowable gross load is greater than the maximum take-off weight of the critical aircraft.

[4] Was not calculated because feature was evaluated as a flexible pavement.

Table D4
Summary of Pavement Classification Numbers

Pavement Facility	Controlling Feature	PCN[1] Code
Runway 3-21	R10A	91/R/CW/T
Taxiway H	T1A	92/R/CW/T
Taxiway J	T2A	65/R/BW/T
Taxiway I	T3A	86/R/BW/T
Taxiway A	T4A	110/R/BW/T
Taxiway B	T5A	120/R/CW/T
Taxiway G	T7B	102/R/BW/T
Taxiway F	T9B	38/F/AW/T
Taxiway K	T10B	58/R/BW/T
Taxiway C	T16A	91/R/BW/T
Taxiway D	T17A	91/R/BW/T
Taxiway E	T18B	110/R/BW/T
North Apron Washrack Taxiway	T19B	49/R/D/W/T
North Apron Hardstand Taxiway	T20B	24/F/B/W/T
DAACG Ramp	A1B	68/R/BW/T
Southwest Warm-up Apron	A2B	110/R/BW/T
West Apron Extension	A3B	21/R/CW/T
Hangar Apron	A4B	19/R/CW/T
Operational Apron	A7B	10/F/BW/T
Heavy Ramp	A9B	42/R/BW/T
T4D Apron	A10B	99/R/BW/T
Hardstand 10-24	A12B	29/F/A/W/T
East Parking Apron	A13B	4/F/A/W/T
North Apron Washrack	A14B	40/R/CW/T
North Parking Apron	A19B	1/F/A/W/T
Hot Cargo Ramp	A20B	54/R/C/W/T
Northeast Warm-up Apron	A21B	97/R/BW/T

[1] Table D5 describes the components of the PCN code.

Table D5
PCN Five-Part Code

PCN	Pavement Type	Subgrade Strength[1]	Tire Pressure2	Method of PCN Determination
Numerical value	R - rigid	A	W	T - technical evaluation
	F - flexible	B	X	U - using aircraft
		C	Y	
		D	Z	

[1]Code	Category	Flexible Pavement CBR, %	Rigid Pavement K, kPa/mm, (psi/in.)
A	High	≥ 13	≥ 108 (400)
B	Medium	13 > CBR ≥ 8	108 > K ≥ 54 (400 > K ≥ 200)
C	Low	8 > CBR ≥ 4	54 > K ≥ 27 (200 > K ≥ 100)
D	Ultra-low	< 4	< 27 (< 100)

[2]Code	Category	Tire Pressure, MPa (psi)
W	High	No limit
X	Medium	1.0 - 1.5 (146 - 217)
Y	Low	0.51 - 1.0 (73 - 145)
Z	Ultra-low	0 - 0.5 (0 - 72)

Appendix E
Micro PAVER Output Summary

```
 Network ID      - BIGGS
 Branch Name     - Runway 3-21              Slab Length     -     25.00 LF
 Branch Number   - R1A                      Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -     96

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   ------------------------------------------------------------------------
   Inspection Date: Jun/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   ------------------------------------------------------------------------

   PCI OF SECTION =  93                              RATING = EXCELLENT

   TOTAL NUMBER OF SAMPLE UNITS =    4
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =     4
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =     0
   RECOMMENDED MINIMUM OF    4 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  9.1%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    63 LINEAR CR        LOW              2 (SLABS)         2.08     2.2
    66 SMALL PATCH      LOW              1 (SLABS)         1.04     0.2
    67 LARGE PATCH      LOW              3 (SLABS)         3.13     2.2
    70 SCALING          N/A              2 (SLABS)         2.08     1.0
    73 SHRINKAGE CR     N/A             10 (SLABS)        10.42     1.6
    74 JOINT SPALL      LOW              3 (SLABS)         3.13     1.8



       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD                 RELATED DISTRESSES =  25.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY   RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   OTHER                RELATED DISTRESSES =  75.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Runway 3-21              Slab Length     -     25.00 LF
 Branch Number   - R2A                      Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -     48

================================================================================

   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  26                              RATING = POOR

   TOTAL NUMBER OF SAMPLE UNITS =     2
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    2
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    2 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED = 15.0%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    63 LINEAR CR        LOW              9 (SLABS)        18.75    13.2
    63 LINEAR CR        MED              6 (SLABS)        12.50    21.5
    66 SMALL PATCH      LOW             10 (SLABS)        20.83     2.8
    67 LARGE PATCH      LOW              3 (SLABS)         6.25     3.8
    70 SCALING          LOW             14 (SLABS)        29.17     9.0
    72 SHAT SLAB        LOW             12 (SLABS)        25.00    29.6
    72 SHAT SLAB        MED              6 (SLABS)        12.50    30.6
    73 SHRINKAGE        N/A              2 (SLABS)         4.17     1.0
    74 JOINT SPALL      LOW              1 (SLABS)         2.08     1.5


       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =  84.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =  16.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Runway 3-21              Slab Length     -     25.00 LF
 Branch Number   - R3A                      Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -     224

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:               F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  80                              RATING = VERY GOOD

   TOTAL NUMBER OF SAMPLE UNITS =    11
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    9
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    9 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED = 17.2%


         *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    62 CORNER BR        LOW              1 (SLABS)         1.00     0.7
    63 LINEAR CR        LOW             12 (SLABS)         5.43     5.1
    63 LINEAR CR        MED              2 (SLABS)         1.09     1.6
    66 SMALL PATCH      LOW             15 (SLABS)         6.52     0.7
    67 LARGE PATCH      LOW              7 (SLABS)         3.26     2.2
    72 SHAT SLAB        LOW             10 (SLABS)         4.35     9.9
    72 SHAT SLAB        MED              4 (SLABS)         1.63     9.0
    73 SHRINKAGE        N/A              6 (SLABS)         2.72     0.8
    74 JOINT SPALL      LOW              2 (SLABS)         1.09     0.8
    74 JOINT SPALL      HIGH             1 (SLABS)         1.00     3.0
    75 CORNER SPALL     LOW              4 (SLABS)         1.63     0.7


       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =  76.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =  24.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Runway 3-21              Slab Length     -     25.00 LF
 Branch Number   - R4C                      Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -  1,772

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  87                              RATING = EXCELLENT

   TOTAL NUMBER OF SAMPLE UNITS =    89
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =   27
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    8 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  7.9%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    63 LINEAR CR        LOW             72 (SLABS)         4.07     4.0
    66 SMALL PATCH      LOW            594 (SLABS)        33.52     4.7
    66 SMALL PATCH      MED             10 (SLABS)         1.00     0.6
    67 LARGE PATCH      LOW            105 (SLABS)         5.93     3.6
    72 SHAT SLAB        LOW             10 (SLABS)         1.00     2.5
    73 SHRINKAGE        N/A             33 (SLABS)         1.85     0.8
    74 JOINT SPALL      LOW             23 (SLABS)         1.30     1.1
    74 JOINT SPALL      HIGH             3 (SLABS)         1.00     1.0
    75 CORNER SPALL     LOW             16 (SLABS)         1.00     0.3
    75 CORNER SPALL     HIGH             7 (SLABS)         1.00     1.2


       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =  33.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =  67.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Runway 3-21               Section Length  -   8586.00 LF
 Branch Number   - R5C                       Section Width   -     25.00 LF
 Section Number  - 1    Family - DEFAULT     Section Area    - 204650.00 SF

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   ------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:               F.O.D.:
   ------------------------------------------------------------------------

   PCI OF SECTION =  70                              RATING = GOOD

   TOTAL NUMBER OF SAMPLE UNITS =   43
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =  14
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =   0
   RECOMMENDED MINIMUM OF   18 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  4.3%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    43 BLOCK CR         LOW         108715.58 (SF)        53.12    29.0
    43 BLOCK CR         MED           7301.19 (SF)         3.57    17.1
    48 L & T CR         LOW          17556.84 (LF)         8.58    21.2



       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD                RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY  RELATED DISTRESSES = 100.00 PERCENT DEDUCT VALUES.
   OTHER               RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Runway 3-21              Section Length  -   8196.00 LF
 Branch Number   - R6C                      Section Width   -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Section Area    - 204500.00 SF

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   ------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :            Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   ------------------------------------------------------------------------

   PCI OF SECTION =  70                              RATING = GOOD

   TOTAL NUMBER OF SAMPLE UNITS =   43
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =  14
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =   0
   RECOMMENDED MINIMUM OF   11 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  9.7%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    43 BLOCK CR         LOW          92955.55 (SF)        45.46    27.6
    43 BLOCK CR         MED           3647.95 (SF)         1.78    14.0
    48 L & T CR         LOW           4731.91 (LF)         2.31     8.3
    48 L & T CR         MED             29.19 (LF)         0.10     4.0



       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD                RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY  RELATED DISTRESSES = 100.00 PERCENT DEDUCT VALUES.
   OTHER               RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES
```

```
 Network ID      - BIGGS
 Branch Name     - Runway 3-21               Section Length  -   2489.00 LF
 Branch Number   - R7C                       Section Width   -     50.00 LF
 Section Number  - 1    Family - DEFAULT     Section Area    - 124450.00 SF

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   ------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   ------------------------------------------------------------------------

   PCI OF SECTION =  69                              RATING = GOOD

   TOTAL NUMBER OF SAMPLE UNITS =   23
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =  15
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =   0
   RECOMMENDED MINIMUM OF   14 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED = 15.4%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    43 BLOCK CR         LOW          82630.83 (SF)        66.46    31.2
    43 BLOCK CR         MED          10359.85 (SF)         8.32    22.1
    48 L & T CR         LOW            464.25 (LF)         0.37     3.8
    50 PATCHING         MED            248.64 (SF)         0.20     2.0


       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD                 RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY   RELATED DISTRESSES = 100.00 PERCENT DEDUCT VALUES.
   OTHER                RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Runway 3-21              Slab Length     -     25.00 LF
 Branch Number   - R8A                      Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -    253

================================================================================

   ------------------------------------------------------------------------
   Inspection Date: Jun/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   ------------------------------------------------------------------------

   PCI OF SECTION =  97                              RATING = EXCELLENT

   TOTAL NUMBER OF SAMPLE UNITS =   12
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =     9
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =     0
   RECOMMENDED MINIMUM OF    5 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  4.3%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    66 SMALL PATCH      LOW             13 (SLABS)         5.19     0.5
    66 SMALL PATCH      MED              2 (SLABS)         1.00     0.6
    73 SHRINKAGE CR     N/A              2 (SLABS)         1.00     0.6
    74 JOINT SPALL      LOW              2 (SLABS)         1.00     0.6
    74 JOINT SPALL      MED              2 (SLABS)         1.00     1.0
    75 CORNER SPALL     LOW             10 (SLABS)         3.90     1.4



       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD                 RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY   RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   OTHER                RELATED DISTRESSES = 100.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Runway 3-21              Slab Length     -     25.00 LF
 Branch Number   - R9A                      Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -    260

================================================================================

   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  47                              RATING = FAIR

   TOTAL NUMBER OF SAMPLE UNITS =    12
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    9
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    6 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  9.1%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    63 LINEAR CR        LOW            100 (SLABS)        38.51    18.7
    63 LINEAR CR        MED             37 (SLABS)        14.37    23.4
    65 JT SEAL DMG      LOW             60 (SLABS)        22.99     2.0
    66 SMALL PATCH      LOW             81 (SLABS)        31.03     4.3
    67 LARGE PATCH      LOW             18 (SLABS)         6.90     4.1
    67 LARGE PATCH      MED              1 (SLABS)         1.00     2.5
    72 SHAT SLAB        LOW             27 (SLABS)        10.34    18.0
    72 SHAT SLAB        MED              3 (SLABS)         1.15     6.2
    73 SHRINKAGE        N/A             45 (SLABS)        17.24     2.4
    75 CORNER SPALL     LOW              1 (SLABS)         1.00     0.3
    75 CORNER SPALL     MED              3 (SLABS)         1.15     0.9


       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD                 RELATED DISTRESSES =  81.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY   RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   OTHER                RELATED DISTRESSES =  17.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Runway 3-21              Slab Length     -     25.00 LF
 Branch Number   - R10A                     Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -    100

================================================================================

   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  75                              RATING = VERY GOOD

   TOTAL NUMBER OF SAMPLE UNITS =     6
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    6
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    6 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED = 11.0%


         *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    62 CORNER BR        LOW              3 (SLABS)         2.73     2.3
    63 LINEAR CR        LOW             14 (SLABS)        13.64    10.7
    63 LINEAR CR        MED              1 (SLABS)         1.00     1.0
    66 SMALL PATCH      LOW             24 (SLABS)        23.64     3.2
    67 LARGE PATCH      LOW              4 (SLABS)         3.64     2.4
    70 SCALING          LOW              5 (SLABS)         4.55     1.9
    72 SHAT SLAB        LOW              2 (SLABS)         1.82     4.5
    73 SHRINKAGE        N/A             11 (SLABS)        10.91     1.7
    74 JOINT SPALL      LOW              3 (SLABS)         2.73     1.7
    74 JOINT SPALL      MED              1 (SLABS)         1.00     1.0
    75 CORNER SPALL     LOW              1 (SLABS)         1.00     0.3


       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =  60.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =  40.00 PERCENT DEDUCT VALUES.
```

```
Network ID      - BIGGS
Branch Name     - Runway 3-21              Slab Length     -     25.00 LF
Branch Number   - R11B                     Slab Width      -     25.00 LF
Section Number  - 1    Family - DEFAULT    Number of Slabs -     64

================================================================================

  --------------------------------------------------------------------------
  Inspection Date: JUN/25/2002
  Riding Quality :             Safety:       Drainage Cond.:
  Shoulder Cond. :      Overall Cond.:              F.O.D.:
  --------------------------------------------------------------------------

  PCI OF SECTION = 100                              RATING = EXCELLENT

  TOTAL NUMBER OF SAMPLE UNITS =    2
  NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =   2
  NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
  RECOMMENDED MINIMUM OF    2 RANDOM SAMPLE UNITS TO BE SURVEYED.
  STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =    0%


         *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***




      *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

  LOAD               RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
  CLIMATE/DURABILITY RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
  OTHER              RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
```

```
Network ID      - BIGGS
Branch Name     - Taxiway H                Slab Length     -     18.75 LF
Branch Number   - T1A                      Slab Width      -     20.00 LF
Section Number  - 1    Family - DEFAULT    Number of Slabs -    950

================================================================================

  --------------------------------------------------------------------------
  Inspection Date: JUN/25/2002
  Riding Quality :             Safety:       Drainage Cond.:
  Shoulder Cond. :      Overall Cond.:              F.O.D.:
  --------------------------------------------------------------------------

  PCI OF SECTION = 100                              RATING = EXCELLENT

  TOTAL NUMBER OF SAMPLE UNITS =   49
  NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =  20
  NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
  RECOMMENDED MINIMUM OF    5 RANDOM SAMPLE UNITS TO BE SURVEYED.
  STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =    0%


         *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***




      *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

  LOAD               RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
  CLIMATE/DURABILITY RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
  OTHER              RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
```

```
Network ID      - BIGGS
Branch Name     - Taxiway J                Slab Length     -     18.75 LF
Branch Number   - T2A                      Slab Width      -     20.00 LF
Section Number  - 1    Family - DEFAULT    Number of Slabs -    950

================================================================================

  --------------------------------------------------------------------------
  Inspection Date: JUN/25/2002
  Riding Quality :             Safety:       Drainage Cond.:
  Shoulder Cond. :      Overall Cond.:              F.O.D.:
  --------------------------------------------------------------------------

  PCI OF SECTION = 100                              RATING = EXCELLENT

  TOTAL NUMBER OF SAMPLE UNITS =   31
  NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =  17
  NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
  RECOMMENDED MINIMUM OF    5 RANDOM SAMPLE UNITS TO BE SURVEYED.
  STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =    0%


         *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***




      *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

  LOAD               RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
  CLIMATE/DURABILITY RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
  OTHER              RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
```

```
Network ID      - BIGGS
Branch Name     - Taxiway I               Slab Length     -     18.75 LF
Branch Number   - T3A                      Slab Width      -     20.00 LF
Section Number  - 1    Family - DEFAULT    Number of Slabs -    950

================================================================================

  --------------------------------------------------------------------------
  Inspection Date: JUN/25/2002
  Riding Quality :             Safety:       Drainage Cond.:
  Shoulder Cond. :      Overall Cond.:              F.O.D.:
  --------------------------------------------------------------------------

  PCI OF SECTION = 100                              RATING = EXCELLENT

  TOTAL NUMBER OF SAMPLE UNITS =   14
  NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =   9
  NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
  RECOMMENDED MINIMUM OF    5 RANDOM SAMPLE UNITS TO BE SURVEYED.
  STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =    0%


         *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***




      *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

  LOAD               RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
  CLIMATE/DURABILITY RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
  OTHER              RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Taxiway A                Slab Length     -     25.00 LF
 Branch Number   - T4A                      Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -    780

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  89                              RATING = EXCELLENT

   TOTAL NUMBER OF SAMPLE UNITS =    44
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =   20
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF   11 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  9.8%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    62 CORNER BR        MED              2 (SLABS)         1.00     1.5
    62 CORNER BR        HIGH             2 (SLABS)         1.00     3.0
    63 LINEAR CR        LOW             28 (SLABS)         3.55     3.5
    63 LINEAR CR        MED              9 (SLABS)         1.09     1.7
    66 SMALL PATCH      LOW            160 (SLABS)        20.49     2.7
    66 SMALL PATCH      MED              4 (SLABS)         1.00     0.6
    66 SMALL PATCH      HIGH             2 (SLABS)         1.00     2.0
    67 LARGE PATCH      MED              2 (SLABS)         1.00     2.5
    73 SHRINKAGE        N/A             28 (SLABS)         3.55     0.9
    74 JOINT SPALL      LOW              6 (SLABS)         1.00     0.6
    74 JOINT SPALL      MED              2 (SLABS)         1.00     1.0
    74 JOINT SPALL      HIGH             2 (SLABS)         1.00     3.0
    75 CORNER SPALL     LOW              6 (SLABS)         1.00     0.3


       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES = 100.00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Taxiway B                Slab Length     -     25.00 LF
 Branch Number   - T5A                      Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -    504

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  91                              RATING = EXCELLENT

   TOTAL NUMBER OF SAMPLE UNITS =    26
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =   14
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    6 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  7.4%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    63 LINEAR CR        LOW              7 (SLABS)         1.33     1.5
    66 SMALL PATCH      LOW             62 (SLABS)        12.33     1.5
    67 LARGE PATCH      LOW             37 (SLABS)         7.33     4.4
    73 SHRINKAGE        N/A              3 (SLABS)         1.00     0.6
    74 JOINT SPALL      LOW              2 (SLABS)         1.00     0.6
    74 JOINT SPALL      MED              2 (SLABS)         1.00     1.0
    74 JOINT SPALL      HIGH             2 (SLABS)         1.00     3.0
    75 CORNER SPALL     MED              3 (SLABS)         1.00     0.8
    75 CORNER SPALL     HIGH             3 (SLABS)         1.00     1.2


       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =  10.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =  90.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Taxiway B                Slab Length     -     25.00 LF
 Branch Number   - T6A                      Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -    238

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  99                              RATING = EXCELLENT

   TOTAL NUMBER OF SAMPLE UNITS =    12
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =   10
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    5 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  3.8%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    67 LARGE PATCH      LOW              4 (SLABS)        20.00    10.3
    75 CORNER SPALL     LOW              1 (SLABS)         5.00     1.8



       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD                 RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY   RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   OTHER                RELATED DISTRESSES = 100.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Taxiway G               Slab Length     -     25.00 LF
 Branch Number   - T7B                     Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -     56

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  76                              RATING = VERY GOOD

   TOTAL NUMBER OF SAMPLE UNITS =    3
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    3
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    3 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  6.7%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    63 LINEAR CR        LOW             14 (SLABS)        25.00    15.4
    63 LINEAR CR        MED              1 (SLABS)         2.08     5.7
    66 SMALL PATCH      LOW             12 (SLABS)        20.83     2.8
    67 LARGE PATCH      LOW              5 (SLABS)         8.33     4.9
    73 SHRINKAGE        N/A              5 (SLABS)         8.33     1.4
    74 JOINT SPALL      LOW              2 (SLABS)         4.17     2.0



       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD                 RELATED DISTRESSES =  66.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY   RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   OTHER                RELATED DISTRESSES =  34.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Taxiway F                Section Length  -    500.00 LF
 Branch Number   - T8B                      Section Width   -    100.00 LF
 Section Number  - 1    Family - DEFAULT    Section Area    -  50004.00 SF

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   ------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :            Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   ------------------------------------------------------------------------

   PCI OF SECTION =  22                              RATING = VERY POOR

   TOTAL NUMBER OF SAMPLE UNITS =    5
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =   5
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =   0
   RECOMMENDED MINIMUM OF    5 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  9.3%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    43 BLOCK CR         MED          19980.58 (SF)        39.96    37.7
    43 BLOCK CR         HIGH         29970.79 (SF)        59.94    68.6
    50 PATCHING         LOW            499.51 (SF)         1.00     3.6
    52 WEATH/RAVEL      LOW          49951.21 (SF)        99.89    26.3



       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD                RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY  RELATED DISTRESSES = 100.00 PERCENT DEDUCT VALUES.
   OTHER               RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Taxiway F                Section Length  -   2888.00 LF
 Branch Number   - T9B                      Section Width   -    100.00 LF
 Section Number  - 1    Family - DEFAULT    Section Area    - 288800.00 SF

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   ------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :            Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   ------------------------------------------------------------------------

   PCI OF SECTION =  45                              RATING = FAIR

   TOTAL NUMBER OF SAMPLE UNITS =   29
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =   9
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =   0
   RECOMMENDED MINIMUM OF   16 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED = 14.8%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    41 ALLIGATOR CR     LOW            512.88 (SF)         0.18     8.1
    43 BLOCK CR         LOW          64109.57 (SF)        22.20    22.0
    43 BLOCK CR         MED         176175.07 (SF)        61.00    44.0
    43 BLOCK CR         HIGH         16027.58 (SF)         5.55    34.7
    48 LINEAR CR        LOW            320.64 (LF)         0.11     2.5
    48 LINEAR CR        HIGH           192.38 (LF)         0.10     7.5
    49 OIL SPILL        N/A            384.66 (SF)         0.13     2.1
    50 PATCHING         LOW            320.55 (SF)         0.11     2.0
    52 WEATH/RAVEL      LOW         256439.30 (SF)        88.79    25.2



       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD                RELATED DISTRESSES =   5.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY  RELATED DISTRESSES =  94.00 PERCENT DEDUCT VALUES.
   OTHER               RELATED DISTRESSES =   1.00 PERCENT DEDUCT VALUES.
```

```
Network ID      - BIGGS
Branch Name     - Taxiway K                Slab Length     -     19.00 LF
Branch Number   - T10B                     Slab Width      -     19.00 LF
Section Number  - 1    Family - DEFAULT    Number of Slabs -     338

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  --------------------------------------------------------------------------
  Inspection Date: JUN/25/2002
  Riding Quality :             Safety:       Drainage Cond.:
  Shoulder Cond. :      Overall Cond.:              F.O.D.:
  --------------------------------------------------------------------------

  PCI OF SECTION = 100                              RATING = EXCELLENT

  TOTAL NUMBER OF SAMPLE UNITS =   18
  NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =   12
  NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
  RECOMMENDED MINIMUM OF    5 RANDOM SAMPLE UNITS TO BE SURVEYED.
  STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  0.0%


         *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***



      *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

  LOAD                RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
  CLIMATE/DURABILITY  RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
  OTHER               RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Taxiway C                Slab Length     -     25.00 LF
 Branch Number   - T11A                     Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -     66

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  86                              RATING = EXCELLENT

   TOTAL NUMBER OF SAMPLE UNITS =     4
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    4
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    4 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  5.2%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    63 LINEAR CR        LOW              1 (SLABS)         1.52     1.7
    66 SMALL PATCH      LOW             14 (SLABS)        21.21     2.8
    67 LARGE PATCH      LOW              1 (SLABS)         1.52     1.4
    73 SHRINKAGE        N/A             32 (SLABS)        48.48     7.2
    75 CORNER SPALL     LOW              1 (SLABS)         1.52     0.7
    75 CORNER SPALL     MED              1 (SLABS)         1.52     1.0



       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD                 RELATED DISTRESSES =  11.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY   RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   OTHER                RELATED DISTRESSES =  89.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Taxiway C                Slab Length     -     19.00 LF
 Branch Number   - T12A                     Slab Width      -     19.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -    323

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   ----------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   ----------------------------------------------------------------------------

   PCI OF SECTION =  99                              RATING = EXCELLENT

   TOTAL NUMBER OF SAMPLE UNITS =    16
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    8
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    5 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  0.8%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    73 SHRINKAGE        N/A              4 (SLABS)         1.25     0.8
    74 CORNER SPALL     LOW              2 (SLABS)         1.00     0.6


       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES = 100.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Taxiway C                Slab Length     -     75.00 LF
 Branch Number   - T13A                     Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -     60
```

Inspection Date: JUN/25/2002
Riding Quality : Safety: Drainage Cond.:
Shoulder Cond. : Overall Cond.: F.O.D.:

PCI OF SECTION = 75 RATING = VERY GOOD

TOTAL NUMBER OF SAMPLE UNITS = 4
NUMBER OF RANDOM SAMPLE UNITS SURVEYED = 4
NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED = 0
RECOMMENDED MINIMUM OF 4 RANDOM SAMPLE UNITS TO BE SURVEYED.
STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED = 7.1%

*** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

DISTRESS-TYPE	SEVERITY	QUANTITY		DENSITY %	DEDUCT
63 LINEAR CR	LOW	12	(SLABS)	20.00	13.7
63 LINEAR CR	MED	1	(SLABS)	1.67	4.4
66 SMALL PATCH	LOW	21	(SLABS)	35.00	4.9
67 LARGE PATCH	LOW	4	(SLABS)	6.67	4.0
73 SHRINKAGE	N/A	14	(SLABS)	23.33	3.2
75 CORNER SPALL	MED	2	(SLABS)	3.33	3.4

*** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

LOAD RELATED DISTRESSES = 54.00 PERCENT DEDUCT VALUES.
CLIMATE/DURABILITY RELATED DISTRESSES = .00 PERCENT DEDUCT VALUES.
OTHER RELATED DISTRESSES = 46.00 PERCENT DEDUCT VALUES.

```
 Network ID      - BIGGS
 Branch Name     - Taxiway C                Slab Length     -     25.00 LF
 Branch Number   - T14A                     Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -    130

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  92                              RATING = EXCELLENT

   TOTAL NUMBER OF SAMPLE UNITS =    13
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =   10
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    5 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  2.0%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    66 SMALL PATCH      LOW             39 (SLABS)        30.00     4.2
    73 SHRINKAGE        N/A             31 (SLABS)        24.00     3.3



       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES = 100.00 PERCENT DEDUCT VALUES.
```

```
Network ID      - BIGGS
Branch Name     - Taxiway C                Slab Length     -     12.50 LF
Branch Number   - T15A                     Slab Width      -     12.50 LF
Section Number  - 1    Family - DEFAULT    Number of Slabs -    260

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  --------------------------------------------------------------------------
  Inspection Date: JUN/25/2002
  Riding Quality :             Safety:       Drainage Cond.:
  Shoulder Cond. :      Overall Cond.:              F.O.D.:
  --------------------------------------------------------------------------

  PCI OF SECTION = 100                              RATING = EXCELLENT

  TOTAL NUMBER OF SAMPLE UNITS =     6
  NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    6
  NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
  RECOMMENDED MINIMUM OF    5 RANDOM SAMPLE UNITS TO BE SURVEYED.
  STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  0.0%


         *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***



      *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

  LOAD               RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
  CLIMATE/DURABILITY RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
  OTHER              RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Taxiway C                Slab Length     -     19.00 LF
 Branch Number   - T16A                     Slab Width      -     19.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -    216

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   ----------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   ----------------------------------------------------------------------------

   PCI OF SECTION = 100                              RATING = EXCELLENT

   TOTAL NUMBER OF SAMPLE UNITS =    14
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    7
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    5 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  0.0%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    73 SHRINKAGE        N/A              3 (SLABS)         1.43     0.8



       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES = 100.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Taxiway D                Slab Length     -     18.75 LF
 Branch Number   - T17A                     Slab Width      -     20.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -   1143

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION = 98                            RATING = EXCELLENT

   TOTAL NUMBER OF SAMPLE UNITS =    63
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =   22
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    5 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  2.4%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    63 LINEAR CR        LOW             10 (SLABS)         1.00     1.0
    66 SMALL PATCH      LOW             42 (SLABS)         3.64     0.5
    74 JOINT SPALL      LOW             13 (SLABS)         1.14     0.9
    75 CORNER SPALL     LOW              3 (SLABS)         1.00     0.3




       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =  38.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =  62.00 PERCENT DEDUCT VALUES
```

```
 Network ID      - BIGGS
 Branch Name     - Taxiway E                Slab Length     -     20.00 LF
 Branch Number   - T18C                     Slab Width      -     20.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -    154

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION = 100                          RATING = EXCELLENT

   TOTAL NUMBER OF SAMPLE UNITS =    10
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    8
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    5 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  0.4%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    66 SMALL PATCH      LOW              2 (SLABS)         1.25     0.3


       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD                 RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY   RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   OTHER                RELATED DISTRESSES = 100.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Washrack Taxiway         Slab Length     -     25.00 LF
 Branch Number   - T19B                     Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -     24

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  40                              RATING = POOR

   TOTAL NUMBER OF SAMPLE UNITS =     1
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    1
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    1 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  0.0%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    62 CORNER BR        MED              5 (SLABS)        19.23    23.3
    63 LINEAR CR        LOW              1 (SLABS)         3.85     3.8
    65 JT SEAL DAMAGE   HIGH            24 (SLABS)       100.00    12.0
    67 LARGE PATCH      LOW              4 (SLABS)        15.38     8.4
    72 SHAT SLAB        MED              1 (SLABS)         3.85    16.4
    73 SHRINKAGE CR     N/A              3 (SLABS)        11.54     1.7
    74 JOINT SPALL      HIGH             2 (SLABS)         7.69    17.8
    75 CORNER SPALL     HIGH             2 (SLABS)         7.69     6.9

       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =  48.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =  13.00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =  39.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Hardstand 25-27 TWY       Section Length  -    345.00 LF
 Branch Number   - T20B                      Section Width   -     75.00 LF
 Section Number  - 1    Family - DEFAULT     Section Area    -  25875.00 SF

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   ------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:               F.O.D.:
   ------------------------------------------------------------------------

   PCI OF SECTION =   0                              RATING = FAILED

   TOTAL NUMBER OF SAMPLE UNITS =    3
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =   3
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =   0
   RECOMMENDED MINIMUM OF    3 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  0.0%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    41 ALLIGATOR CR     HIGH          6152.17 (SF)        23.78    85.6
    43 BLOCK CR         HIGH         19681.93 (SF)        76.07    73.0
    50 PATCHING         HIGH           200.07 (SF)         0.77    18.0
    52 WEATH/RAVEL      LOW          25884.11 (SF)       100.00    26.4




       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =  42.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =  58.00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
```

```
Network ID      - BIGGS
Branch Name     - DAACG RAMP               Slab Length     -     18.75 LF
Branch Number   - A1B                      Slab Width      -     20.00 LF
Section Number  - 1    Family - DEFAULT    Number of Slabs -   3263

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  --------------------------------------------------------------------------
  Inspection Date: JUN/25/2002
  Riding Quality :             Safety:       Drainage Cond.:
  Shoulder Cond. :      Overall Cond.:              F.O.D.:
  --------------------------------------------------------------------------

  PCI OF SECTION = 100                              RATING = EXCELLENT

  TOTAL NUMBER OF SAMPLE UNITS =   157
  NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =   28
  NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
  RECOMMENDED MINIMUM OF    5 RANDOM SAMPLE UNITS TO BE SURVEYED.
  STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  0.0%


         *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***



      *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

  LOAD               RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
  CLIMATE/DURABILITY RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
  OTHER              RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Southwest Warm-up Pad    Slab Length     -     25.00 LF
 Branch Number   - A2B                      Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -    340

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  84                              RATING = VERY GOOD

   TOTAL NUMBER OF SAMPLE UNITS =    17
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    8
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    5 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  4.9%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    63 LINEAR CR        LOW              4 (SLABS)         1.25     1.4
    65 JT SEAL DMG      MED             43 (SLABS)        12.55     7.0
    65 JT SEAL DAMAGE   HIGH           298 (SLABS)        87.50    12.0
    66 SMALL PATCH      LOW              6 (SLABS)         1.88     0.4
    66 SMALL PATCH      MED              4 (SLABS)         1.25     0.8
    67 LARGE PATCH      LOW              4 (SLABS)         1.25     1.2
    67 LARGE PATCH      MED              4 (SLABS)         1.25     3.6
    73 SHRINKAGE CR     N/A              6 (SLABS)         1.88     0.8
    75 CORNER SPALL     LOW              4 (SLABS)         1.25     0.5


       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD                 RELATED DISTRESSES =   5.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY   RELATED DISTRESSES =  69.00 PERCENT DEDUCT VALUES.
   OTHER                RELATED DISTRESSES =  26.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - West Apron Extension     Slab Length     -     25.00 LF
 Branch Number   - A3B                      Slab Width      -     12.50 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -   1284

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  10                              RATING = FAILED

   TOTAL NUMBER OF SAMPLE UNITS =    61
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    1
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF   22 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  0.0%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    63 LINEAR CR        MED            385 (SLABS)        30.00    35.4
    65 JT SEAL DAMAGE   HIGH          1284 (SLABS)       100.00    12.0
    72 SHAT SLAB        MED            899 (SLABS)        70.00    71.2


       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD                RELATED DISTRESSES =  90.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY  RELATED DISTRESSES =  10.00 PERCENT DEDUCT VALUES.
   OTHER               RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Hangar Apron             Slab Length     -     25.00 LF
 Branch Number   - A4B                      Slab Width      -     12.50 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -    162

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =   3                              RATING = FAILED

   TOTAL NUMBER OF SAMPLE UNITS =     8
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    6
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    5 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  1.4%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    62 CORNER BR        LOW              1 (SLABS)         1.00     0.7
    62 CORNER BR        MED              1 (SLABS)         1.00     1.5
    63 LINEAR CR        LOW             35 (SLABS)        21.67    14.3
    63 LINEAR CR        MED             66 (SLABS)        40.83    41.1
    63 LINEAR CR        HIGH            57 (SLABS)        35.00    54.8
    65 JT SEAL DMG      HIGH           162 (SLABS)       100.00    12.0
    66 SMALL PATCH      LOW              3 (SLABS)         1.67     0.4
    66 SMALL PATCH      MED              4 (SLABS)         2.50     1.4
    66 SMALL PATCH      HIGH             1 (SLABS)         1.00     2.0
    67 LARGE PATCH      MED              1 (SLABS)         1.00     2.5
    71 FAULTING         LOW              9 (SLABS)         5.83     5.2
    71 FAULTING         MED              1 (SLABS)         1.00     2.0
    72 SHAT SLAB        LOW              1 (SLABS)         1.00     2.5
    72 SHAT SLAB        MED              1 (SLABS)         1.00     5.0
    73 SHRINKAGE CR     N/A              5 (SLABS)         3.33     0.9
    74 JOINT SPALL      LOW              1 (SLABS)         1.00     0.6
    74 JOINT SPALL      MED             15 (SLABS)         9.17     7.2
    74 JOINT SPALL      HIGH            43 (SLABS)        26.67    33.3
    75 CORNER SPALL     LOW              1 (SLABS)         1.00     0.3
    75 CORNER SPALL     MED              5 (SLABS)         3.33     2.3
    75 CORNER SPALL     HIGH             1 (SLABS)         1.00     1.2


       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD                 RELATED DISTRESSES =  63.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY   RELATED DISTRESSES =   6.00 PERCENT DEDUCT VALUES.
   OTHER                RELATED DISTRESSES =  31.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Hangar Apron             Slab Length     -     25.00 LF
 Branch Number   - A5B                      Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -    160

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  37                              RATING = POOR

   TOTAL NUMBER OF SAMPLE UNITS =     9
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    6
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    7 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED = 13.7%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    63 LINEAR CR        LOW              2 (SLABS)         1.38     1.5
    65 JT SEAL DMG      HIGH           160 (SLABS)       100.00    12.0
    66 SMALL PATCH      LOW             20 (SLABS)        12.41     1.5
    66 SMALL PATCH      MED             17 (SLABS)        10.34     5.6
    66 SMALL PATCH      HIGH            29 (SLABS)        17.93    15.9
    67 LARGE PATCH      LOW             25 (SLABS)        15.86     8.6
    67 LARGE PATCH      MED              4 (SLABS)         2.76     7.4
    67 LARGE PATCH      HIGH             3 (SLABS)         2.07     8.0
    71 FAULTING         MED              1 (SLABS)         1.00     2.0
    73 SHRINKAGE CR     N/A              1 (SLABS)         1.00     0.6
    74 JOINT SPALL      LOW             17 (SLABS)        10.34     3.6
    74 JOINT SPALL      MED              8 (SLABS)         4.83     4.3
    74 JOINT SPALL      HIGH            29 (SLABS)        17.93    27.9
    75 CORNER SPALL     LOW              4 (SLABS)         2.76     1.1
    75 CORNER SPALL     MED              6 (SLABS)         3.45     2.4
    75 CORNER SPALL     HIGH             9 (SLABS)         5.52     5.2


       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD                RELATED DISTRESSES =   1.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY  RELATED DISTRESSES =  11.00 PERCENT DEDUCT VALUES.
   OTHER               RELATED DISTRESSES =  88.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Hangar Apron             Slab Length     -     25.00 LF
 Branch Number   - A6B                      Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -    160

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  42                              RATING = FAIR

   TOTAL NUMBER OF SAMPLE UNITS =    12
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    8
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    9 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED = 17.5%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    62 CORNER BR        MED              1 (SLABS)         1.00     1.5
    63 LINEAR CR        LOW             13 (SLABS)         8.07     7.2
    63 LINEAR CR        MED             10 (SLABS)         6.21    13.6
    63 LINEAR CR        HIGH             3 (SLABS)         1.86     8.4
    65 JT SEAL DMG      MED             46 (SLABS)        28.57     7.0
    65 JT SEAL DMG      HIGH           114 (SLABS)        71.43    12.0
    66 SMALL PATCH      LOW             76 (SLABS)        47.20     6.4
    66 SMALL PATCH      MED             10 (SLABS)         6.21     3.4
    66 SMALL PATCH      HIGH             8 (SLABS)         4.97     6.4
    67 LARGE PATCH      LOW             32 (SLABS)        19.88    10.2
    67 LARGE PATCH      MED              8 (SLABS)         4.97    10.8
    67 LARGE PATCH      HIGH             2 (SLABS)         1.24     4.3
    71 FAULTING         MED              1 (SLABS)         1.00     1.0
    72 SHAT SLAB        MED              1 (SLABS)         1.00     5.0
    73 SHRINKAGE CR     N/A              3 (SLABS)         1.86     0.8
    74 JOINT SPALL      LOW              9 (SLABS)         5.59     2.3
    74 JOINT SPALL      MED              8 (SLABS)         4.97     4.4
    74 JOINT SPALL      HIGH            13 (SLABS)         8.07    18.3
    75 CORNER SPALL     LOW              9 (SLABS)         5.59     2.1
    75 CORNER SPALL     MED              5 (SLABS)         3.11     2.1
    75 CORNER SPALL     HIGH             7 (SLABS)         4.35     4.4


       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =  27.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =  14.00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =  59.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Operational Apron         Section Length  -    810.00 LF
 Branch Number   - A7B                       Section Width   -    500.00 LF
 Section Number  - 1    Family - DEFAULT     Section Area    - 405000.00 SF

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   ------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:               F.O.D.:
   ------------------------------------------------------------------------

   PCI OF SECTION =  17                              RATING = POOR

   TOTAL NUMBER OF SAMPLE UNITS =   80
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =   7
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =   0
   RECOMMENDED MINIMUM OF    5 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  0.0%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    43 BLOCK CR         HIGH        404574.36 (SF)        99.89    78.4
    52 WEATH/RAVEL      LOW         404574.36 (SF)        99.89    26.3



       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES = 100.00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Operational Apron         Section Length  -   2470.00 LF
 Branch Number   - A8B                       Section Width   -    500.00 LF
 Section Number  - 1    Family - DEFAULT     Section Area    -1235000.00 SF

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   ------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:               F.O.D.:
   ------------------------------------------------------------------------

   PCI OF SECTION =  42                              RATING = FAIR

   TOTAL NUMBER OF SAMPLE UNITS =  250
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =  15
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =   0
   RECOMMENDED MINIMUM OF   59 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED = 22.1%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    43 BLOCK CR         LOW         575727.64 (SF)        46.62    27.9
    43 BLOCK CR         HIGH        657974.47 (SF)        53.28    66.5



       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES = 100.00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Heavy Ramp               Slab Length     -     25.00 LF
 Branch Number   - A9B                      Slab Width      -     12.50 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -    520

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  74                              RATING = VERY GOOD

   TOTAL NUMBER OF SAMPLE UNITS =   108
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =   27
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF   10 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  8.4%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    63 LINEAR CR        LOW            135 (SLABS)        25.93    15.7
    63 LINEAR CR        MED              2 (SLABS)         1.00     1.0
    66 SMALL PATCH      LOW             64 (SLABS)        12.31     1.5
    66 SMALL PATCH      MED             11 (SLABS)         2.05     1.1
    67 LARGE PATCH      LOW             40 (SLABS)         7.65     4.6
    67 LARGE PATCH      MED              6 (SLABS)         1.12     3.1
    73 SHRINKAGE CR     N/A            197 (SLABS)        37.87     5.5
    74 JOINT SPALL      LOW              9 (SLABS)         1.68     1.4
    74 JOINT SPALL      MED              1 (SLABS)         1.00     1.0



       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =  48.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =  52.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - T4D Apron                Slab Length     -     25.00 LF
 Branch Number   - A10B                     Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -    284

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION = 100                              RATING = EXCELLENT

   TOTAL NUMBER OF SAMPLE UNITS =    15
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =   11
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    5 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  0.0%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    66 SMALL PATCH      LOW              8 (SLABS)         2.78     0.4



       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES = 100.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Hardstands 10-24         Slab Length     -     25.00 LF
 Branch Number   - A11B                     Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -    162

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =   8                              RATING = FAILED

   TOTAL NUMBER OF SAMPLE UNITS =     9
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    7
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    5 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  4.3%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    63 LINEAR CR        LOW             13 (SLABS)          7.94     7.1
    63 LINEAR CR        MED             10 (SLABS)          6.35    13.8
    63 LINEAR CR        HIGH             3 (SLABS)          1.59     7.4
    65 JT SEAL DMG      MED             46 (SLABS)         28.57     7.0
    65 JT SEAL DMG      HIGH           116 (SLABS)         71.43    12.0
    66 SMALL PATCH      LOW              3 (SLABS)          1.59     0.4
    67 LARGE PATCH      LOW             15 (SLABS)          9.52     5.6
    72 SHAT SLAB        LOW              9 (SLABS)          5.56    11.9
    72 SHAT SLAB        MED             39 (SLABS)         23.81    42.2
    72 SHAT SLAB        HIGH            42 (SLABS)         26.19    58.2
    73 SHRINKAGE CR     N/A              3 (SLABS)          1.59     0.8
    75 CORNER SPALL     LOW              1 (SLABS)          1.00     0.3


       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =  85.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =  11.00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =   4.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Hardstands 10-24          Section Length  -   1350.00 LF
 Branch Number   - A12B                      Section Width   -     50.00 LF
 Section Number  - 1    Family - DEFAULT     Section Area    -  67500.00 SF

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   ------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   ------------------------------------------------------------------------

   PCI OF SECTION =  20                              RATING = VERY POOR

   TOTAL NUMBER OF SAMPLE UNITS =    9
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =   6
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =   0
   RECOMMENDED MINIMUM OF    7 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED = 14.3%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    43 BLOCK CR         MED          42585.76 (SF)        63.09    44.6
    43 BLOCK CR         HIGH         21292.83 (SF)        31.54    57.7
    49 OIL SPILL        N/A             29.99 (SF)         0.10     2.0
    50 PATCHING         LOW           3598.80 (SF)         5.33    10.3
    52 WEATH/RAVEL      LOW          21292.88 (SF)        31.55    16.8
    52 BLOCK CR         MED          42585.49 (SF)        63.09    46.6



       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =  99.00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =   1.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - East Parking Apron        Section Length  -   3275.00 LF
 Branch Number   - A13B                      Section Width   -    300.00 LF
 Section Number  - 1    Family - DEFAULT     Section Area    - 813750.00 SF

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   ------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:               F.O.D.:
   ------------------------------------------------------------------------

   PCI OF SECTION =  25                              RATING = VERY POOR

   TOTAL NUMBER OF SAMPLE UNITS =  147
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =  16
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =   0
   RECOMMENDED MINIMUM OF    5 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  4.3%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    43 BLOCK CR         MED         812393.21 (SF)        99.89    53.0
    52 WEATH/RAVEL      MED         812885.97 (SF)        99.89    56.7



       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES = 100.00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - North Apron Washrack     Slab Length     -     25.00 LF
 Branch Number   - A14B                     Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -     70

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  76                              RATING = VERY GOOD

   TOTAL NUMBER OF SAMPLE UNITS =     4
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    4
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    4 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED = 12.2%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    62 CORNER BR        LOW              1 (SLABS)         1.22     1.2
    62 CORNER BR        MED              1 (SLABS)         1.22     1.6
    63 LINEAR CR        LOW              1 (SLABS)         1.22     1.3
    63 LINEAR CR        MED              3 (SLABS)         3.66     9.2
    65 JT SEAL DMG      HIGH            70 (SLABS)       100.00    12.0
    66 SMALL PATCH      MED              1 (SLABS)         1.22     0.7
    66 SMALL PATCH      HIGH             1 (SLABS)         1.22     2.7
    67 LARGE PATCH      LOW              1 (SLABS)         1.22     1.1
    73 SHRINKAGE CR     N/A              4 (SLABS)         6.10     1.2
    74 JOINT SPALL      LOW              1 (SLABS)         1.22     1.0
    75 CORNER SPALL     HIGH             1 (SLABS)         1.22     2.0


       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =  40.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =  35.00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =  25.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - North Parking Apron      Slab Length     -     25.00 LF
 Branch Number   - A15B                     Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -    106

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  11                              RATING = VERY POOR

   TOTAL NUMBER OF SAMPLE UNITS =     4
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    4
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    4 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED = 10.7%


         *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    63 LINEAR CR        LOW             24 (SLABS)        22.55    14.6
    63 LINEAR CR        MED             27 (SLABS)        25.49    32.5
    63 LINEAR CR        HIGH            15 (SLABS)        13.73    31.5
    65 JT SEAL DMG      LOW             25 (SLABS)        23.53     2.0
    65 JT SEAL DMG      MED             81 (SLABS)        76.47     7.0
    66 SMALL PATCH      LOW             15 (SLABS)        13.73     1.7
    66 SMALL PATCH      MED             11 (SLABS)        10.78     5.8
    66 SMALL PATCH      HIGH             8 (SLABS)         7.84     8.7
    67 LARGE PATCH      LOW              1 (SLABS)         1.00     0.8
    67 LARGE PATCH      MED              1 (SLABS)         1.00     2.5
    67 LARGE PATCH      HIGH             1 (SLABS)         1.00     4.0
    71 FAULTING         LOW              2 (SLABS)         1.96     2.3
    71 FAULTING         MED              5 (SLABS)         4.90     8.6
    71 FAULTING         HIGH             2 (SLABS)         1.96     6.8
    72 SHAT SLAB        LOW              4 (SLABS)         3.92     9.1
    72 SHAT SLAB        MED             26 (SLABS)        24.51    42.8
    73 SHRINKAGE CR     N/A              6 (SLABS)         5.88     1.1
    74 JOINT SPALL      LOW              1 (SLABS)         1.00     0.6
    74 JOINT SPALL      MED              1 (SLABS)         1.00     1.0
    74 JOINT SPALL      HIGH             5 (SLABS)         4.90    13.3
    75 CORNER SPALL     LOW              1 (SLABS)         1.00     0.3


       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =  66.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =   5.00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =  29.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - North Parking Apron      Slab Length     -     25.00 LF
 Branch Number   - A16B                     Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -     66

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  16                              RATING = VERY POOR

   TOTAL NUMBER OF SAMPLE UNITS =     4
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    4
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    4 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  5.1%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    63 LINEAR CR        LOW             12 (SLABS)        18.18    15.0
    63 LINEAR CR        MED             15 (SLABS)        22.73    30.5
    63 LINEAR CR        HIGH             3 (SLABS)         4.55    15.0
    65 JT SEAL DMG      MED             66 (SLABS)       100.00     7.0
    66 SMALL PATCH      LOW              6 (SLABS)         9.09     0.9
    66 SMALL PATCH      MED              2 (SLABS)         3.03     1.7
    67 LARGE PATCH      LOW              4 (SLABS)         6.06     3.7
    70 SCALING          LOW             42 (SLABS)        63.64    13.9
    72 SHAT SLAB        LOW             18 (SLABS)        27.27    31.0
    72 SHAT SLAB        MED             12 (SLABS)        18.18    36.9
    73 SHRINKAGE CR     N/A              4 (SLABS)         6.06     1.2
    74 JOINT SPALL      LOW              2 (SLABS)         3.03     1.7
    74 JOINT SPALL      HIGH             2 (SLABS)         3.03     9.3
    75 CORNER SPALL     MED              2 (SLABS)         3.03     2.1


       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =  75.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =   4.00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =  21.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - North Parking Apron      Slab Length     -     25.00 LF
 Branch Number   - A17B                     Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -     48

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  23                              RATING = VERY POOR

   TOTAL NUMBER OF SAMPLE UNITS =     2
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    2
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    2 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED = 15.0%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    63 LINEAR CR        LOW              7 (SLABS)        13.89    10.9
    63 LINEAR CR        MED              5 (SLABS)        11.11    20.0
    65 JT SEAL DMG      LOW             45 (SLABS)        94.44     2.0
    66 SMALL PATCH      LOW              3 (SLABS)         5.56     0.6
    66 SMALL PATCH      MED              1 (SLABS)         2.78     1.5
    66 SMALL PATCH      HIGH             3 (SLABS)         5.56     6.9
    67 LARGE PATCH      LOW              4 (SLABS)         8.33     4.9
    70 SCALING          LOW             20 (SLABS)        41.67    11.2
    72 SHAT SLAB        LOW             21 (SLABS)        44.44    39.7
    72 SHAT SLAB        MED              4 (SLABS)         8.33    24.9
    73 SHRINKAGE CR     N/A              3 (SLABS)         5.56     1.1
    74 JOINT SPALL      LOW              3 (SLABS)         5.56     2.3
    74 JOINT SPALL      HIGH             1 (SLABS)         2.78     8.7
    75 CORNER SPALL     MED              1 (SLABS)         2.78     1.9
    75 CORNER SPALL     HIGH             1 (SLABS)         2.78     3.5


       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =  69.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =   1.00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =  30.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - North Parking Apron      Slab Length     -     25.00 LF
 Branch Number   - A18B                     Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -     33

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   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  19                              RATING = VERY POOR

   TOTAL NUMBER OF SAMPLE UNITS =     2
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    2
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    2 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED = 15.0%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    62 CORNER BR        MED              1 (SLABS)         1.79     2.6
    63 LINEAR CR        LOW              4 (SLABS)        12.50    10.1
    63 LINEAR CR        MED              5 (SLABS)        16.10    25.1
    65 JT SEAL DMG      HIGH            33 (SLABS)       100.00    12.0
    66 SMALL PATCH      LOW              3 (SLABS)         8.93     1.0
    66 SMALL PATCH      MED              1 (SLABS)         3.57     2.0
    72 SHAT SLAB        LOW              4 (SLABS)        12.50    20.2
    72 SHAT SLAB        MED             12 (SLABS)        37.50    52.7
    73 SHRINKAGE CR     N/A              1 (SLABS)         1.79     0.8


       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =  88.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =   9.00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =   3.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - North Parking Apron       Section Length  -    850.00 LF
 Branch Number   - A19B                      Section Width   -    166.00 LF
 Section Number  - 1    Family - DEFAULT     Section Area    - 141100.00 SF

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   ------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :            Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   ------------------------------------------------------------------------

   PCI OF SECTION =  23                              RATING = VERY POOR

   TOTAL NUMBER OF SAMPLE UNITS =   25
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =  10
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =   0
   RECOMMENDED MINIMUM OF   15 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED = 15.4%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    43 BLOCK CR         LOW          14027.52 (SF)          9.94    17.0
    43 BLOCK CR         MED          20860.86 (SF)         14.78    26.6
    43 BLOCK CR         HIGH        105713.73 (SF)         74.92    72.7
    50 PATCHING         LOW             67.66 (SF)          0.10     2.0
    52 WEATH/RAVEL      LOW          91900.13 (SF)         65.13    22.5
    52 WEATH/RAVEL      MED          14095.17 (SF)          9.99    20.7



       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES = 100.00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Hot Cargo Ramp           Slab Length     -     20.00 LF
 Branch Number   - A20B                     Slab Width      -     18.75 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -   1098

================================================================================

   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION =  98                              RATING = EXCELLENT

   TOTAL NUMBER OF SAMPLE UNITS =    56
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =   22
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    5 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  3.6%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT
    63 LINEAR CR        LOW             17 (SLABS)         1.56     1.7
    66 SMALL PATCH      LOW             10 (SLABS)         1.00     0.2
    67 LARGE PATCH      LOW              7 (SLABS)         1.00     0.8
    73 SHRINKAGE CR     N/A              7 (SLABS)         1.00     0.6



       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =  53.00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =  47.00 PERCENT DEDUCT VALUES.
```

```
 Network ID      - BIGGS
 Branch Name     - Northeast Warm-up Pad    Slab Length     -     25.00 LF
 Branch Number   - A21B                     Slab Width      -     25.00 LF
 Section Number  - 1    Family - DEFAULT    Number of Slabs -    160

================================================================================

   --------------------------------------------------------------------------
   Inspection Date: JUN/25/2002
   Riding Quality :             Safety:       Drainage Cond.:
   Shoulder Cond. :      Overall Cond.:              F.O.D.:
   --------------------------------------------------------------------------

   PCI OF SECTION = 100                              RATING = EXCELLENT

   TOTAL NUMBER OF SAMPLE UNITS =    19
   NUMBER OF RANDOM SAMPLE UNITS SURVEYED     =    8
   NUMBER OF ADDITIONAL SAMPLE UNITS SURVEYED =    0
   RECOMMENDED MINIMUM OF    5 RANDOM SAMPLE UNITS TO BE SURVEYED.
   STANDARD DEVIATION OF PCI BETWEEN RANDOM UNITS SURVEYED =  0.0%


          *** EXTRAPOLATED DISTRESS QUANTITIES FOR SECTION ***

    DISTRESS-TYPE       SEVERITY            QUANTITY         DENSITY %
DEDUCT



       *** PERCENT OF DEDUCT VALUES BASED ON DISTRESS MECHANISM ***

   LOAD               RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   CLIMATE/DURABILITY RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
   OTHER              RELATED DISTRESSES =    .00 PERCENT DEDUCT VALUES.
```

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6. AUTHOR(S)

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Geotechnical and Structures Laboratory
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13. SUPPLEMENTARY NOTES

14. ABSTRACT

An airfield pavement evaluation was performed in June 2002 at Biggs Army Airfield, Fort Bliss, Texas, to develop information pertaining to the structural adequacy of the airfield pavements for continued use under its current mission and the upgrading of the pavements for mission changes. The pavement surface condition was evaluated using the Pavement Condition Index (PCI) survey procedure, and a nondestructive evaluation procedure was used to determine the load-carrying capability of the pavements and overlay requirements for continued use of the pavements under current missions. Results of the evaluation are presented including: (a) a tabulation of the existing pavement features, (b) the results of the nondestructive tests performed using a heavy weight deflectometer, (c) the PCI and rating of the surface of each pavement feature, (d) a structural evaluation and overlay requirements for 88,194 passes of the B-727 aircraft on Portland cement concrete, and 171,488 passes of the B-747 aircraft on asphalt concrete, (e) the pavement classification number for each pavement facility, and (f) maintenance and repair recommendations based on the structural evaluation and condition survey.

15. SUBJECT TERMS

Aircraft classification number	Nondestructive testing
Allowable gross aircraft load	Pavement classification number
Biggs Army Airfield	Pavement condition index

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